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(FILE 'HOME' ENTERED AT 14:38:44 ON 04 JUN 2004)

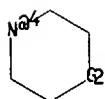
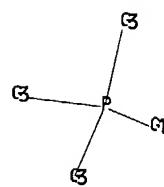
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L1                   STRUCTURE uploaded  
L2                   34 S L1  
L3                   STRUCTURE uploaded  
L4                   3 S L3  
L5                   208 S L3 SSS FULL

FILE 'CPLUS' ENTERED AT 14:45:05 ON 04 JUN 2004

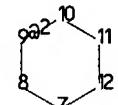
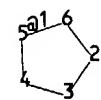
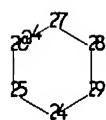
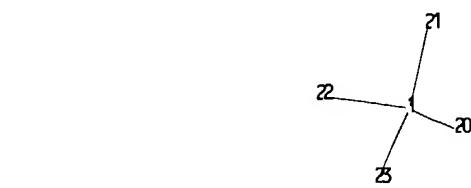
L6                   67 S L5  
L7                   28 S L6 AND PATENT/DT  
L8                   39 S L6 NOT L7  
L9                   9 S L8 AND CATALYST?

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N@3



14  
15  
16

chain nodes :  
 1 13 14 15 20  
 ring nodes :  
 2 3 4 5 6 7 8 9 10 11 12 24 25 26 27 28 29  
 ring/chain nodes :  
 21 22 23  
 chain bonds :  
 1-20 1-21 1-22 1-23 13-14 13-15  
 ring bonds :  
 2-3 2-6 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 24-25 24-29 25-26 26-27  
 27-28 28-29  
 exact/norm bonds :  
 1-20 1-21 1-22 1-23 2-3 2-6 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14  
 13-15 24-25 24-29 25-26 26-27 27-28 28-29

G1:[\*1], [\*2], [\*3]

G2:O,N

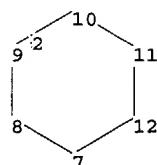
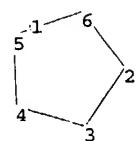
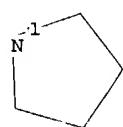
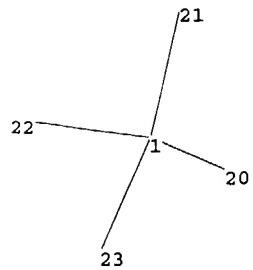
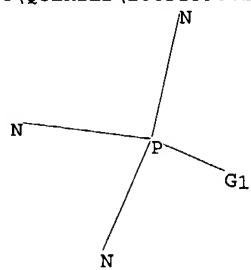
G3:[\*1], [\*2], [\*3], [\*4]

Match level :

1:CLASS 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom  
 12:Atom 13:CLASS 14:CLASS 15:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:Atom  
 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom

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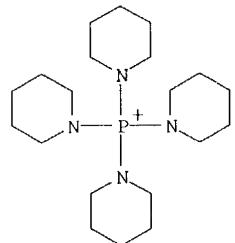
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ring nodes :  
2 3 4 5 6 7 8 9 10 11 12  
ring/chain nodes :  
21 22 23  
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ring bonds :  
2-3 2-6 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12  
exact/norm bonds :  
1-20 1-21 1-22 1-23 2-3 2-6 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12  
13-14 13-15

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=> d 1-28 bib abs hitstr

L7 ANSWER 1 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:972022 CAPLUS  
DN 140:16651  
TI Method of producing a compound containing fluorine via fluorine-halogen exchange using special polyaminophosphazene catalysts  
IN Wessel, Thomas; Decker, Daniel; Huenig, Hagen; Schwesinger, Reinhard  
PA Clariant G.m.b.H., Germany  
SO PCT Int. Appl., 32 pp.  
CODEN: PIXXD2  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003101926	A1	20031211	WO 2003-EP5447	20030520
	W: AU, CA, CN, JP, KR, RU, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	DE 10232811	A1	20031224	DE 2002-10232811	20020719
PRAI	DE 2002-10224625	A	20020604		
	DE 2002-10232811	A	20020719		
OS	CASREACT 140:16651; MARPAT 140:16651				
AB	Fluorination of organic compds. was accomplished by fluorine-halogen exchange with an alkali metal, alkaline earth, or ammonium fluoride in the presence of an aminophosphazene such as 1,1,1,3,3,3-hexapyrrolidinodiphosphazenum chloride (I) or 1,1,1,3,3,3-hexapiperidinodiphosphazenum chloride (II). Thus, 3,5-dichloro-2,4,6-trifluoropyridine reacted with KF in sulfolane-PhCl at 215° in the presence of I to give a mixture containing 75% 3-chloro-2,4,5,6-tetrafluoropyridine and 24% pentafluoropyridine. In another example, 2-chloro-6-fluorobenzaldehyde reacted with KF in PhCl at 190° in the presence of I or II to give mixts. containing 88.7 and 88.5% 2,6-difluorobenzaldehyde, resp.				
IT	<b>211385-45-4</b>				
	RL: CAT (Catalyst use); USES (Uses) (fluorination of chlorofluoro organic compds. via chlorine-fluorine exchange with inorg. fluoride in presence of aminophosphazene catalyst)				
RN	211385-45-4 CAPLUS				
CN	Phosphorus(1+), tetra-1-piperidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)				



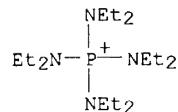
● Cl<sup>-</sup>

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:789293 CAPLUS  
DN 140:305759  
TI Method for preparing fluorine-containing anilines from polyfluorinated benzotrifluorides  
IN Bil'dinov, I. K.; Podsevalov, P. V.  
PA Obshchestvo s Ogranichennoi Otvetstvennost'yu Nauchno-Vnedrencheskaya Firma "Okta", Russia  
SO Russ., No pp. given  
CODEN: RUXXE7  
DT Patent  
LA Russian

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2209810	C2	20030810	RU 2001-128791	20011025
	WO 2003035483	A3	20030807	WO 2002-RU464	20021017
	W: JP, US RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
PRAI	RU 2001-128791	A	20011025		
AB	Fluorine-containing anilines $\text{NH}_2\text{C}_6\text{X}_1\text{X}_2\text{X}_3\text{X}_4\text{X}_5$ ( $\text{X}_1\text{-}\text{X}_5$ = fluorine, chlorine, bromine, iodine or hydrogen atoms; being at least one of them is a fluorine atom and another is a hydrogen atom; e.g., 2,6-dichloro-3,5-difluoroaniline) are prepared by the initial substitution of a fluorine atom in the benzene ring of a polyfluorinated benzotrifluoride $\text{CF}_3\text{C}_6\text{Z}_1\text{Z}_2\text{Z}_3\text{Z}_4\text{Z}_5$ ( $\text{Z}_1\text{-}\text{Z}_5$ = fluorine, chlorine, bromine, iodine, hydrogen; where at least two of them are fluorine atoms; e.g., 3,5-dichloro-2,4,6-trifluorobenzotrifluoride) for the amino group by an aminating agent to form a fluorine-containing aminobenzotrifluoride where the trifluoromethyl group is replaced for hydrogen atom by heating in a mineral acid medium (e.g., 90% sulfuric acid). Ammonia or ammonia in a solvent (e.g., water or $\text{C}_2\text{H}_5\text{OH}$ ) is used as the aminating agent. The process is carried out in autoclave at 40-140° in the presence of a phase-transfer amination catalyst which is a quaternary ammonium or phosphonium compound [e.g., tetrakis(diethylamino)phosphonium bromide], a crown ether, or a guanidinium salt.				
IT	<b>81175-49-7</b>	Tetrakis(diethylamino)phosphonium bromide			
	RL: CAT (Catalyst use); USES (Uses)	(in a method for preparing fluorine-containing anilines from polyfluorinated benzotrifluorides)			
RN	81175-49-7	CAPLUS			
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)				



●  $\text{Br}^-$

L7 ANSWER 3 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:450801 CAPLUS  
 DN 139:36952  
 TI Catalysts and process for the preparation of isocyanurate group-containing polyisocyanates and their use  
 IN Kohlstruk, Stephan; Poersch, Waltraud; Ewald, Michael; Windmueller, Manuela  
 PA Degussa A.-G., Germany  
 SO Eur. Pat. Appl., 14 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1318160	A1	20030611	EP 2002-22727	20021011
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	DE 10159803	A1	20030703	DE 2001-10159803	20011205
	US 2003135007	A1	20030717	US 2002-307923	20021203
	JP 2003206328	A2	20030722	JP 2002-351409	20021203
PRAI	DE 2001-10159803	A	20011205		
OS	MARPAT 139:36952				
AB	The title catalysts, with high activity and giving good reaction and process control, are reaction products of aminosilanes and fluoride salts of specified structure. Stirring a mixture of HMDI 800, CsF 1.2, and heptamethyldisilazane 0.24 g while heating slowly to 140° and heating for 1 h gave an HMDI isocyanurate trimer mixture with NCO content 43.3% (.apprx.24% conversion).				

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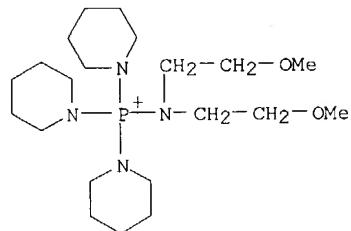
IT 540494-52-8 540494-54-0 540494-56-2

540494-60-8

RL: CAT (Catalyst use); USES (Uses)  
(catalysts and process for the preparation of isocyanurate group-containing polyisocyanates and their use)

RN 540494-52-8 CAPLUS

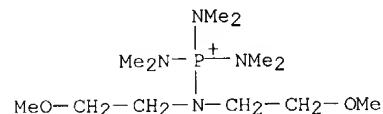
CN Phosphorus(1+), [2-methoxy-N-(2-methoxyethyl)ethanaminato- $\kappa$ N]tri-1-piperidinyl-, fluoride, (T-4)- (9CI) (CA INDEX NAME)



● F<sup>-</sup>

RN 540494-54-0 CAPLUS

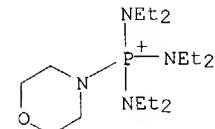
CN Phosphorus(1+), [2-methoxy-N-(2-methoxyethyl)ethanaminato- $\kappa$ N]tris(N-methylmethanaminato)-, fluoride, (T-4)- (9CI) (CA INDEX NAME)



● F<sup>-</sup>

RN 540494-56-2 CAPLUS

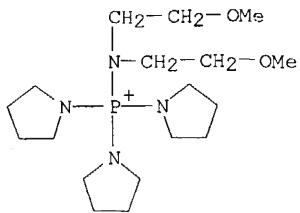
CN Phosphorus(1+), tris(N-ethylethanaminato) (morpholinato- $\kappa$ N4)-, fluoride, (T-4)- (9CI) (CA INDEX NAME)



● F<sup>-</sup>

RN 540494-60-8 CAPLUS

CN Phosphorus(1+), [2-methoxy-N-(2-methoxyethyl)ethanaminato- $\kappa$ N]tri-1-pyrrolidinyl-, fluoride, (T-4)- (9CI) (CA INDEX NAME)

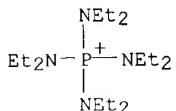
● F<sup>-</sup>

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:266779 CAPLUS  
DN 139:150918  
TI Fluoro rubber-based compositions containing phosphonium salts as vulcanization catalysts  
IN Gol'farb, V. I.; Deev, L. E.; Bil'dinov, I. K.; Podsevalov, P. V.; Nazarenko, T. I.; Gorban, V. I.; Afanas'eva, I. A.; Pichkhidze, S. Ya.  
PA ZAO "Basairi", Russia  
SO Russ., No pp. given  
CODEN: RUXXE7  
DT Patent  
LA Russian  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2193583	C2	20021127	RU 1999-128018	19991231
PRAI	RU 1999-128018				

AB A rubber composition comprises hexafluoropropylene-vinylidene fluoride rubber (SKF 26) (66-68), low mol. weight hexafluoropropylene-vinylidene fluoride rubber (32-34), carbon black (TG 10) (20-26) as a filler, magnesium oxide (6-10) as a vulcanization activator, barium sulfate (26-30), calcium hydroxide (5-7), low mol. weight polyethylene (1-3) as a dispersing agent, bisphenol A (0.8-1.0) as a crosslinking agent, and a catalyst (0.2-0.4 parts) which is a mixture of phosphonium salts of the formula RR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>P<sup>+</sup>X<sup>-</sup>, where R, R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are equal to -N(C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>, and X is Br or BF<sub>4</sub>. The fluoro rubber-based compns. are characterized by increased vulcanization rate and can be used for production of seals. Thus, a composition comprising SKF 26 rubber (67), low mol. weight hexafluoropropylene-vinylidene fluoride rubber (SKF 260NM) (33), carbon black (TG 10) (23), magnesium oxide (8), barium sulfate (28), calcium hydroxide (6), low mol. weight polyethylene (2), bisphenol A (0.9), and a catalyst mixture (0.3 parts) of tetrakis(diethylamino)phosphonium bromide and tetrakis(diethylamino)phosphonium tetrafluoroborate was produced.  
IT 81175-49-7, Tetrakis(diethylamino)phosphonium bromide  
407630-77-7, Tetrakis(diethylamino)phosphonium tetrafluoroborate  
RL: CAT (Catalyst use); USES (Uses)  
(fluoro rubber-based compns. containing phosphonium salts as vulcanization catalysts)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)

● Br<sup>-</sup>

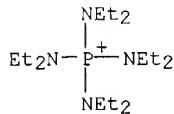
RN 407630-77-7 CAPLUS

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CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, (T-4)-,  
tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

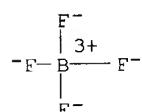
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CMF C16 H40 N4 P



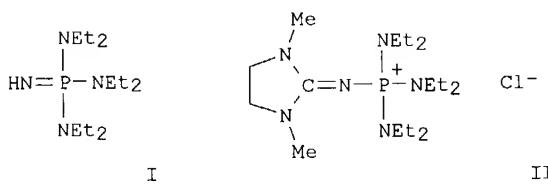
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CRN 14874-70-5  
CMF B F4  
CCI CCS



L7 ANSWER 5 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:963727 CAPLUS  
DN 138:39405  
TI Preparation of fluoroaromatics via phosphazeniun and related ion catalyzed  
Halex reaction  
IN Henrich, Marielouise; Marhold, Albrecht; Kolomeitsev, Alexander;  
Roesenthaler, Gerd-Volker  
PA Bayer AG, Germany  
SO Eur. Pat. Appl., 22 pp.  
CODEN: EPXXDW  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1266904	A1	20021218	EP 2002-11682	20020603
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	DE 10129057	A1	20021219	DE 2001-10129057	20010615
	JP 2003064033	A2	20030305	JP 2002-166738	20020607
	US 2003036667	A1	20030220	US 2002-171004	20020612
PRAI	DE 2001-10129057	A	20010615		
OS	CASREACT 138:39405; MARPAT 138:39405				
GI					



AB Title compds. A-N-B+ An- [A = -C(NR1R1)2, -P(NR1R1)3; B = -C(NR1R1)2,  
-P(NR1R1)3, -S(NR1R1)-X=C(NR1R1)2, -S(NR1R1)2; R1 = (un)substituted alkyl,  
alkylene, aryl, etc.; X = N, P; An- = Cl, Br, HF2-, etc.] were prepared as  
catalysts for the fluorination of aromatic compds. via the halogen exchange

(Halex) reaction. For example, condensation of phosphorimidic triamide I, e.g., prepared from PC15 in one step, and 2-chloro-1,3-dimethylimidazolinium chloride afforded phosphazenum ion II. Thus, a mixture of 3,4-dichlorobenzonitrile (172 gm), potassium fluoride (69.6 gm) and phosphazenum chloride II (3.95 gm) in DMSO (200 gm), was heated at 170 °C for 6 h. The mixture was cooled to temperature and after an aqueous work-up and fractionated distillation, provided 3-chloro-4-fluorobenzonitrile in 92 % yield. Approx. 4-specific examples of title compds. A-N-Bt An- were prepared

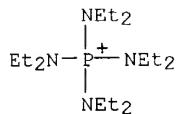
IT **81175-49-7**, Tetrakis(diethylamino)phosphonium bromide

RL: CAT (Catalyst use); USES (Uses)

(preparation of fluoroaroms. via phosphazenum and related ion catalyzed halex reaction)

RN 81175-49-7 CAPLUS

CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br-

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:364136 CAPLUS

DN 136:388473

TI Perfluoroalkyl phosphate salt, organic solvent, and polymer mixtures as electrolytes

IN Schmidt, Michael; Ott, Frank; Jungnitz, Michael; Ignatyev, Nicolai; Kuehner, Andreas

PA Merck Patent GmbH, Germany

SO Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI EP 1205998	A2	20020515	EP 2001-124178	20011011
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10055812	A1	20020523	DE 2000-10055812	20001110
DE 10058264	A1	20020529	DE 2000-10058264	20001123
CN 1353134	A	20020612	CN 2001-137868	20011109
US 2002114996	A1	20020822	US 2001-986773	20011109
BR 2001005142	A	20020625	BR 2001-5142	20011112
JP 2002249670	A2	20020906	JP 2001-346335	20011112
PRAI DE 2000-10055812	A	20001110		
DE 2000-10058264	A	20001123		

OS MARPAT 136:388473

AB Electrolytes for batteries, condensers, supercondensers, and galvanic cells consist of: (1) a fluoroalkyl phosphate salt of general formula  $\text{Mn}^+([\text{PF}_x(\text{CyF}_2y+1-\text{zHz})_6-\text{x}]-)\text{n}$  in which  $\text{Mn}^+$  is a monovalent, divalent, or trivalent cation,  $x = 1-5$ ;  $1 \leq y \leq 8$ ; and  $z = 2y + 1$ ;  $n = 1-3$ ; and the ligands  $\text{CyF}_2y+1-\text{zHz}$  are the same or different, (2) an organic solvent, selected from organic carbonates, esters, ethers, amides, a sulfur-containing solvent, and aprotic solvents, and (3) a polymer. The cation ( $\text{Mn}^+$ ) can be a metal ion (e.g.,  $\text{Li}^+$ ,  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Rb}^+$ ,  $\text{Cs}^+$ ,  $\text{Mg}^{2+}$ , or  $\text{Al}^{3+}$ ), preferably  $\text{Li}^+$ , or an organic cation, such as  $\text{NR}_4^+$ ,  $[\text{P}(\text{NR}_2)_k\text{R}_4-k]^+$  ( $k = 0-4$ ),  $[\text{C}(\text{NR}_2)_3]^+$ , or  $[\text{CR}_3]^+$ . The polymer component is selected from homopolymers or copolymers of vinylidenedifluoride, acrylonitrile, Me (meth)acrylate, or THF (preferably polyvinylidene difluoride).

IT **394692-91-2 394692-92-3**

RL: TEM (Technical or engineered material use); USES (Uses)

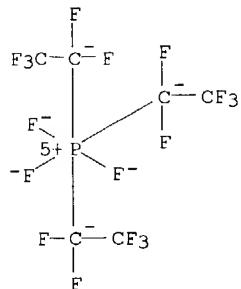
(electrolytes containing; perfluoroalkyl phosphate salt, organic solvent, and polymer mixts. as electrolytes)

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RN 394692-91-2 CAPLUS  
CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, (T-4)-,  
(OC-6-21)-trifluorotris(pentafluoroethyl)phosphate(1-) (9CI) (CA INDEX  
NAME)

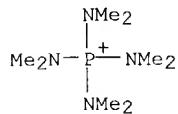
GM 1

CRN 123199-69-9  
CMF C6 F18 P  
CCT CCS



CM 2

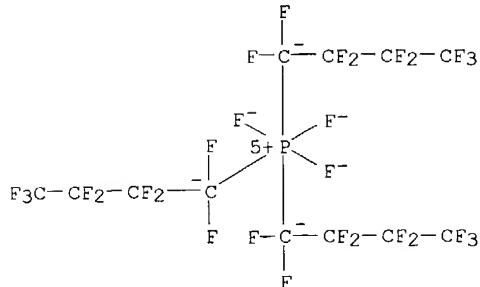
CRN 45050-74-6  
CMF C8 H24 N4 P



RN 394692-92-3 CAPLUS  
CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, (T-4)-,  
(OC-6-21)-trifluorotris(nonafluorobutyl)phosphate(1-) (9CI) (CA INDEX  
NAME)

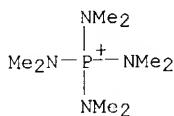
CM 1

CRN 377739-46-3  
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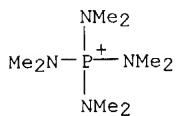
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CRN 45050-74-6  
CMF C8 H24 N4 P



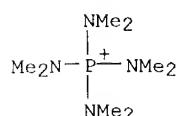
L7 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:104662 CAPLUS  
 DN 136:151308  
 TI Preparation of fluoroalkylphosphates for use in electrochemical cells  
 IN Heider, Udo; Schmidt, Michael; Kuehner, Andreas; Sartori, Peter; Ignat'yev, Nikolai  
 PA Merck Patent G.m.b.H., Germany  
 SO Eur. Pat. Appl., 15 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1178050	A2	20020206	EP 2001-115786	20010711
EP 1178050	A3	20020925		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10038858	A1	20020214	DE 2000-10038858	20000804
TW 530432	B	20030501	TW 2001-90118520	20010731
US 2002022182	A1	20020221	US 2001-918464	20010801
BR 2001003182	A	20020319	BR 2001-3182	20010802
JP 2002138095	A2	20020514	JP 2001-235045	20010802
CN 1337398	A	20020227	CN 2001-123298	20010803
PRAI DE 2000-10038858 A 20000804				
OS MARPAT 136:151308				
AB The preparation of fluoroalkylphosphates via cation exchange reaction is described. Thus, reaction of Li[PF <sub>3</sub> (C <sub>2</sub> F <sub>5</sub> ) <sub>3</sub> ] with Et <sub>4</sub> NX (X = F, Cl) gave title compds., Et <sub>4</sub> N[PF <sub>3</sub> (C <sub>2</sub> F <sub>5</sub> ) <sub>3</sub> ]. The prepared compds. are useful as supporting electrolyte in batteries, condensation, supercondensation, and electrochem. cells.				
IT 66647-63-0 234451-74-2				
RL: RCT (Reactant); RACT (Reactant or reagent) (cation exchange reaction of fluoroalkylphosphates with)				
RN 66647-63-0 CAPLUS				
CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)				



● Cl<sup>-</sup>

RN 234451-74-2 CAPLUS  
 CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, fluoride, (T-4)- (9CI)  
(CA INDEX NAME)



● F<sup>-</sup>

IT 394692-91-2P 394692-92-3P

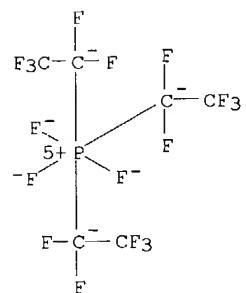
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of fluoroalkylphosphates for use in electrochem. cells)

RN 394692-91-2 CAPLUS

CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, (T-4)-,  
(OC-6-21)-trifluorotris(pentafluoroethyl)phosphate(1-) (9CI) (CA INDEX  
NAME)

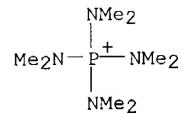
CM 1

CRN 123199-69-9  
CMF C6 F18 P  
CCI CCS



CM 2

CRN 45050-74-6  
CMF C8 H24 N4 P

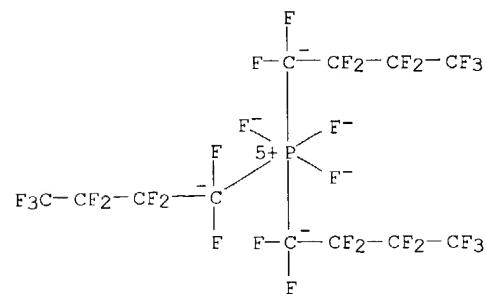


RN 394692-92-3 CAPLUS

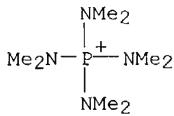
CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, (T-4)-,  
(OC-6-21)-trifluorotris(nonafluorobutyl)phosphate(1-) (9CI) (CA INDEX  
NAME)

CM 1

CRN 377739-46-3  
CMF C12 F30 P  
CCI CCS



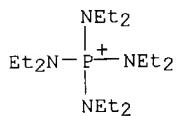
CM 2

CRN 45050-74-6  
CMF C8 H24 N4 P

L7 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:42324 CAPLUS  
 DN 136:71530  
 TI Fluorination method for preparing polyfluoroaromatic compounds using alkali metal fluorides  
 IN Igumnov, S. M.; Shipigusev, A. A.; Nikulin, K. V.  
 PA Permskii Filial Rossiyskogo Nauchnogo Tsentr "prikladnaya Khimiya", Russia  
 SO Russ., No pp. given  
 CODEN: RUXXE7  
 DT **Patent**  
 LA Russian  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2157800	C2	20001020	RU 1999-101187	19990118

PRAI RU 1999-101187 19990118  
 OS CASREACT 136:71530; MARPAT 136:71530  
 AB Polyfluoroarom. compds. C<sub>6</sub>F<sub>n</sub>X<sub>6-n</sub> (X = F, Cl, H, CF<sub>3</sub>, N; n = 1-5; e.g., hexafluorobenzene) by heating the corresponding halide-containing aromatic compds. (e.g., hexachlorobenzene) with alkali metal fluorides (e.g., potassium fluoride) in the liquid phase in the presence of a catalyst [e.g., tetrakis(diethylamido)phosphonium bromide]. The fluorination is carried out on incomplete fluorination products of the original halide-containing compound and the desired products are simultaneously recovered.  
 IT **81175-49-7**  
 RL: CAT (Catalyst use); USES (Uses)  
 (fluorination method for preparing polyfluoroarom. compds. using alkali metal fluorides)  
 RN 81175-49-7 CAPLUS  
 CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)

● Br<sup>-</sup>

L7 ANSWER 9 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:410401 CAPLUS  
 DN 135:19780  
 TI Halogen exchange reactions in preparing catalysts and their precursors  
 IN Owens, David W.; Balhoff, John F.  
 PA Albemarle Corporation, USA  
 SO U.S., 19 pp., Cont.-in-part of WO9822413.  
 CODEN: USXXAM  
 DT **Patent**  
 LA English  
 FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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10632396

PI US 6241917 B1 20010605 US 1999-316170 19990521  
US 5824827 A 19981020 US 1996-754338 19961122  
WO 9822413 A1 19980528 WO 1997-US21629 19971121  
W: CA, CN, JP, US, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  
US 6455718 B1 20020924 US 2001-790263 20010221  
PRAI US 1996-754338 A2 19961122  
US 1996-756105 B2 19961125  
WO 1997-US21629 A2 19971112  
US 1999-316170 A3 19990521

OS CASREACT 135:19780

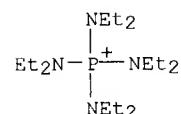
AB A process which comprises heating a mixture formed from ingredients comprising (i) perhalobenzene,  $C_6F_nX_6-n$  where  $n$  is 0 to 4, and each  $X$  is, independently, a Cl or Br atom, with (ii) an alkali metal fluoride, and (iii) an aminophosphonium catalyst [e.g.,  $(Et_2N)_4PBr$ ] at which the resultant chloropentafluorobenzene or bromopentafluorobenzene are formed. The resultant chloropentafluorobenzene or bromopentafluorobenzene can be converted into a pentafluorophenyl Grignard reagent or a pentafluorophenyl alkali metal compound. This in turn can be converted into tris(pentafluorophenylborane), which can be converted into a single coordination complex comprising a labile tetra(pentafluorophenyl)boron anion (e.g., a trialkylammonium tetra(pentafluorophenyl) B complex or an  $N,N$ -dimethylanilinium tetra(pentafluorophenyl)boron complex). The complex can be used in the preparation of an active catalyst by mixing the complex with a cyclopentadienyl metal compound containing a Group IVB metal in suitable solvent or diluent so that the cation of the complex reacts irreversibly with a ligand of the cyclopentadienyl compound, and such that the pentafluorophenyl anion forms a noncoordinating ion pair with a resulting cation produced from the cyclopentadienyl metal compound. Alternatively, the tris(pentafluorophenylborane) can be contacted with a metallocene  $LMX_2$  wherein  $L$  is a derivative of a delocalized pi-bonded group imparting a constrained geometry to the metal active site and where  $L$  contains up to 50 nonhydrogen atoms,  $M$  is a Group 4 metal, and each  $X$  is, independently, hydride, or a hydrocarbyl, silyl, or germyl group having up to 20 C, Si, or Ge atoms to form a catalyst having a limiting charge separated structure  $LMX_2 A$  wherein  $A$  is an anion formed from the tris(pentafluorophenyl)borane.

IT 81175-49-7, Tetrakis(diethylamino)phosphonium bromide  
208509-87-9, Tetrakis(diethylamino)phosphonium chloride

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with chloropentafluorobenzene for the preparation of metal alkene-polymerization catalysts)

RN 81175-49-7 CAPLUS

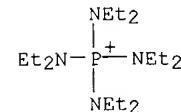
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



●  $\text{Br}^-$

RN 208509-87-9 CAPLUS

CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



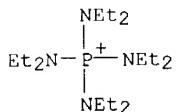
●  $\text{Cl}^-$

10632396

RE.CNT 123 THERE ARE 123 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2001:62390 CAPLUS  
DN 134:101014  
TI Preparation of tetrakis(pyrrolidino/piperidino)phosphonium salt containing mixtures  
IN Schiemenz, Berthold; Wessel, Thomas; Pfirrmann, Ralf; Beck, Andreas; Hahn, Walter  
PA Clariant G.m.b.H., Germany  
SO Eur. Pat. Appl., 12 pp.  
CODEN: EPXXDW  
DT Patent  
LA German  
FAN.CNT 1

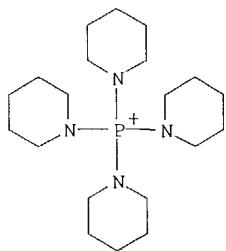
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1070724	A1	20010124	EP 2000-114363	20000705
	EP 1070724	B1	20030305		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 19934594	A1	20010125	DE 1999-19934594	19990723
	AT 233778	E	20030315	AT 2000-114363	20000705
	ES 2193912	T3	20031116	ES 2000-114363	20000705
	US 6407029	B1	20020618	US 2000-617470	20000717
	JP 2001064291	A2	20010313	JP 2000-222624	20000724
PRAI	DE 1999-19934594	A	19990723		
OS	MARPAT 134:101014				
AB	The preparation of title compds., (R)4P+X- (R = piperidino, pyrrolidino; X = organic or inorg. anion equivalent), useful as catalyst or cocatalyst for phase transfer, nucleophilic substitution, or halogen exchange reaction, is described. Thus, reaction of PCl <sub>5</sub> with pyrrolidine in xylene followed by basic hydrolysis gave a mixture of tetrakis(pyrrolidino)phosphonium chloride with tris(pyrrolidino)phosphine oxide.				
IT	<b>81175-49-7P</b> , Tetrakis(diethylamino)phosphonium bromide <b>83978-46-5P 208509-87-9P</b> , Tetrakis(diethylamino)phosphonium chloride <b>211385-43-2P 211385-45-4P</b>				
	RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)				
	(preparation of tetrakis(pyrrolidino/piperidino)phosphonium salt containing mixts. as halogen exchange reaction catalyst)				
RN	81175-49-7 CAPLUS				
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)				



● Br<sup>-</sup>

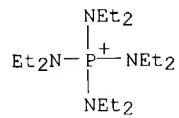
RN 83978-46-5 CAPLUS  
CN Phosphorus(1+), tetra-1-piperidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)

10632396



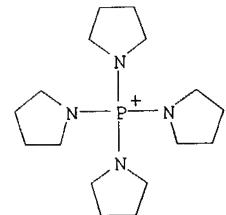
● Br<sup>-</sup>

RN 208509-87-9 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, chloride, (T-4)- (9CI)  
(CA INDEX NAME)



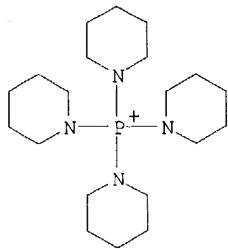
● Cl<sup>-</sup>

RN 211385-43-2 CAPLUS  
CN Phosphorus(1+), tetra-1-pyrrolidinyl-, chloride, (T-4)- (9CI) (CA INDEX  
NAME)



● Cl<sup>-</sup>

RN 211385-45-4 CAPLUS  
CN Phosphorus(1+), tetra-1-piperidinyl-, chloride, (T-4)- (9CI) (CA INDEX  
NAME)

● Cl<sup>-</sup>

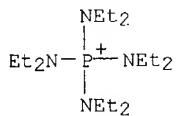
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 11 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:62389 CAPLUS  
 DN 134:101013  
 TI Aminophosphonium compounds  
 IN Schiemenz, Berthold; Wessel, Thomas; Pfirmann, Ralf  
 PA Clariant G.m.b.H., Germany  
 SO Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW

DT Patent *attm*  
 LA German  
 FAN.CNT 1

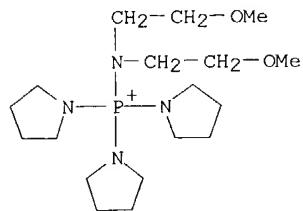
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1070723	A1	20010124	EP 2000-114362	20000705
	EP 1070723	B1	20040225		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 19934595	A1	20010125	DE 1999-19934595	19990723
	US 6465643	B1	20021015	US 2000-617471	20000717
	JP 2001064290	A2	20010313	JP 2000-222430	20000724
	US 2002193592	A1	20021219	US 2002-135252	20020430
	US 6645904	B2	20031111		
	US 2004029723	A1	20040212	US 2003-632396	20030801
PRAI	DE 1999-19934595	A	19990723		
	US 2000-617471	A3	20000717		
	US 2002-135252	A3	20020430		
OS	MARPAT 134:101013				
AB	The preparation of aminophosphonium compds., R1R2R3R4P+X- (R1, R2, R3, R4 = organoamino group; X = organic or inorg. equivalent), useful as catalyst for halo-exchange (Halex reaction), is described. Thus, reaction of PC15 with bis(2-methoxyethyl)amine in PhCl followed by treatment with pyrrolidine gave title compound, bis(2-methoxyethyl)aminotris(pyrrolidino)phosphonium chloride.				
IT	<b>81175-49-7P</b> , Tetrakis(diethylamino)phosphonium bromide <b>320351-98-2P</b> <b>320351-99-3P</b> <b>320352-00-9P</b> <b>320352-01-0P</b> <b>320352-02-1P</b> <b>320352-03-2P</b> <b>320352-04-3P</b> <b>320352-05-4P</b> <b>320352-06-5P</b> <b>320352-08-7P</b> <b>320352-09-8P</b> <b>320352-10-1P</b> , Tris(dibutylamino)(diethylamino)phosphonium bromide <b>320352-11-2P</b> <b>320352-12-3P</b> <b>320352-13-4P</b> <b>320352-14-5P</b> RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (preparation as halogen exchange reaction catalyst)				
RN	81175-49-7 CAPLUS				
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)				

10632396



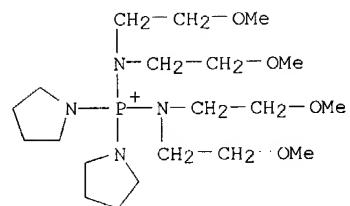
● Br<sup>-</sup>

RN 320351-98-2 CAPLUS  
CN Phosphorus(1+), [2-methoxy-N-(2-methoxyethyl)ethanaminato- $\kappa$ N]tri-1-pyrrolidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)



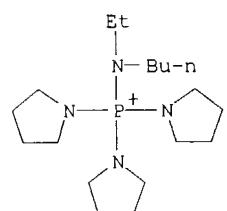
● Cl<sup>-</sup>

RN 320351-99-3 CAPLUS  
CN Phosphorus(1+), bis[2-methoxy-N-(2-methoxyethyl)ethanaminato- $\kappa$ N]di-1-pyrrolidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

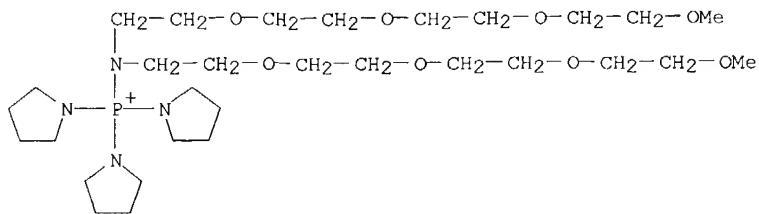
RN 320352-00-9 CAPLUS  
CN Phosphorus(1+), (N-ethyl-1-butanaminato)tri-1-pyrrolidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

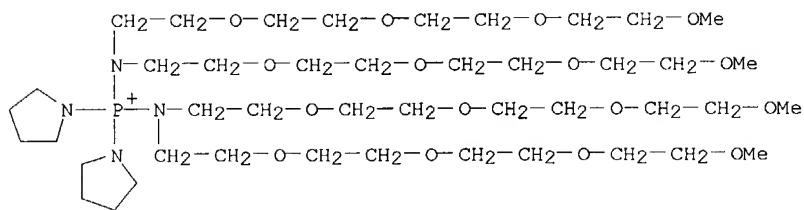
10632396

RN 320352-01-0 CAPLUS  
CN Phosphorus(1+), tri-1-pyrrolidinyl(N-3,6,9,12-tetraoxatridec-1-yl-2,5,8,11-tetraoxatridecan-13-aminato- $\kappa$ N)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



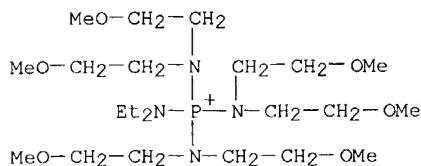
● Cl<sup>-</sup>

RN 320352-02-1 CAPLUS  
CN Phosphorus(1+), di-1-pyrrolidinylbis(N-3,6,9,12-tetraoxatridec-1-yl-2,5,8,11-tetraoxatridecan-13-aminato- $\kappa$ N)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



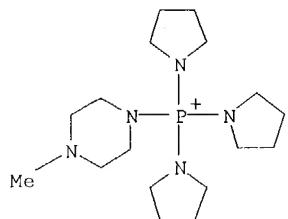
● Cl<sup>-</sup>

RN 320352-03-2 CAPLUS  
CN Phosphorus(1+), (N-ethylethanaminato)tris[2-methoxy-N-(2-methoxyethyl)ethanaminato- $\kappa$ N]-, bromide, (T-4)- (9CI) (CA INDEX NAME)

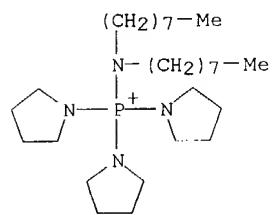


● Br<sup>-</sup>

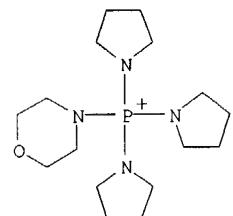
RN 320352-04-3 CAPLUS  
CN Phosphorus(1+), (1-methylpiperazinato- $\kappa$ N4)tri-1-pyrrolidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)

● Cl<sup>-</sup>

RN 320352-05-4 CAPLUS  
 CN Phosphorus(1+), (N-octyl-1-octanaminato)tri-1-pyrrolidinyl-, chloride,  
 (T-4)- (9CI) (CA INDEX NAME)

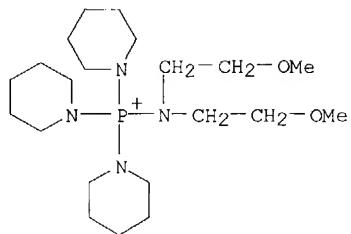
● Cl<sup>-</sup>

RN 320352-06-5 CAPLUS  
 CN Phosphorus(1+), (morpholinato-κN4)tri-1-pyrrolidinyl-, chloride,  
 (T-4)- (9CI) (CA INDEX NAME)

● Cl<sup>-</sup>

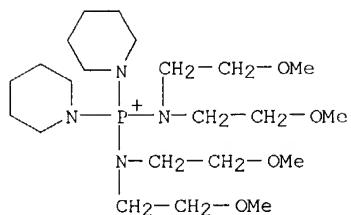
RN 320352-08-7 CAPLUS  
 CN Phosphorus(1+), [2-methoxy-N-(2-methoxyethyl)ethanaminato-κN]tri-1-piperidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)

10632396



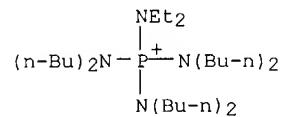
● Cl<sup>-</sup>

RN 320352-09-8 CAPLUS  
CN Phosphorus(1+), bis[2-methoxy-N-(2-methoxyethyl)ethanaminato-κN]di-1-piperidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)



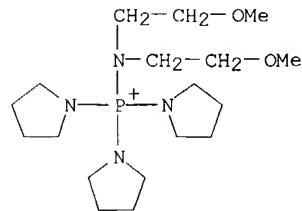
● Cl<sup>-</sup>

RN 320352-10-1 CAPLUS  
CN Phosphorus(1+), tris(N-butyl-1-butanaminato) (N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

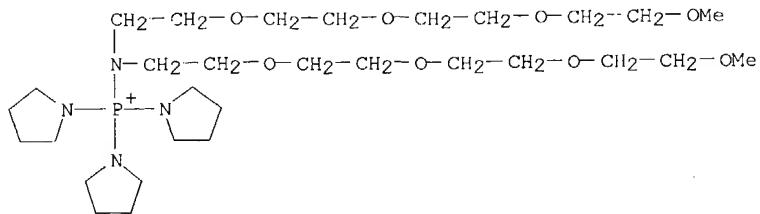
RN 320352-11-2 CAPLUS  
CN Phosphorus(1+), [2-methoxy-N-(2-methoxyethyl)ethanaminato-κN]tri-1-pyrrolidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

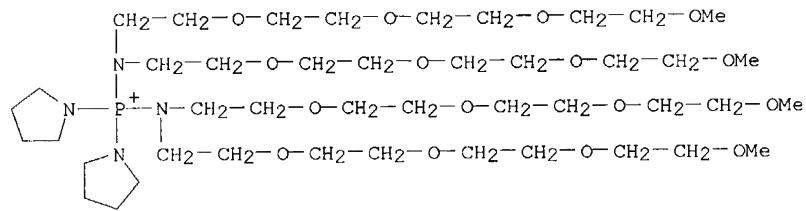
10632396

RN 320352-12-3 CAPLUS  
CN Phosphorus(1+), tri-1-pyrrolidinyl(N-3,6,9,12-tetraoxatridec-1-yl-2,5,8,11-tetraoxatridecan-13-aminato- $\kappa$ N)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



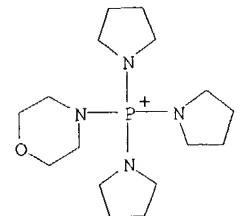
● Br⁻

RN 320352-13-4 CAPLUS  
CN Phosphorus(1+), di-1-pyrrolidinylbis(N-3,6,9,12-tetraoxatridec-1-yl-2,5,8,11-tetraoxatridecan-13-aminato- $\kappa$ N)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br⁻

RN 320352-14-5 CAPLUS  
CN Phosphorus(1+), (morpholinato- $\kappa$ N4)tri-1-pyrrolidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br⁻

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 12 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2000:824259 CAPLUS  
DN 133:350349  
TI An improved synthesis of tetrakis(dihydrocarbylamino)phosphonium halides

10632396

IN Fletcher, Michelle O.; Devrou, Philip R.; Balhoff, John F.; Atkinson, Brian

PA Albemarle Corporation, USA

SO PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000069864	A1	20001123	WO 2000-US13602	20000517

W: CA, CN, JP

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRAI US 1999-315217 A 19990519  
US 2000-503128 A 20000211

OS CASREACT 133:350349

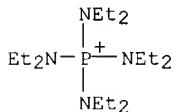
AB An improved, com. viable process for synthesizing tetrakis(dihydrocarbyl amino)phosphonium halides, e.g. tetrakis(diethylamino)phosphonium bromide, in the absence of oxygen is described. When reacting a tris(dihydrocarbyl amino)phosphinimine with a halohydrocarbon and an aqueous solution of a source of hydroxide ion to form a tetrakis(dihydrocarbyl amino)phosphonium halide, a combination of increased pressure and liquid organic medium is used. The advantages gained by operating in this fashion include shorter reaction times and the need for only about stoichiometric or slightly more than stoichiometric amts. of halohydrocarbon and source of hydroxide ion.

IT 81175-49-7P, Tetrakis(diethylamino)phosphonium bromide

RL: SPN (Synthetic preparation); PREP (Preparation)  
(improved synthesis of tetrakis(dihydrocarbyl amino)phosphonium halides)

RN 81175-49-7 CAPLUS

CN Phosphorus(1+), tetrakis(N-ethyllethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 13 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:715648 CAPLUS

DN 133:282227

TI Manufacture of poly(alkylene oxides) using metal-free odorless phosphazenum salts as initiators

IN Hen, Paraa; Inoue, Kaoru; Kakigano, Takeaki

PA Mitsui Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000281771	A2	20001010	JP 1999-91081	19990331

PRAI JP 1999-91081 19990331

OS MARPAT 133:282227

AB Poly(alkylene oxides) are manufactured by polymerization of alkylene oxides in the presence of  $[\text{P}^+([\text{N:P}(\text{NR}_2)_2]\text{aNR}_2)[[\text{N:P}(\text{NR}_2)_2]\text{bNR}_2][[\text{N:P}(\text{NR}_2)_2]\text{cNR}_2][[\text{N:P}(\text{NR}_2)_2]\text{dNR}_2]]_n$   $\text{Bn}^-$  [R = H, aliphatic or aromatic (heteroatom-containing) hydrocarbyl;  $\text{Bn}^-$  = anion derived from active H compds.; n ≥ 1; a, b, c, d ≥ 0] whose calculated maximum electrostatic potential is ≤ 260 kJ/mol when  $\text{Bn}^-$  = OH<sup>-</sup>. The initiators are soluble in organic solvents. Propylene oxide was polymerized in the presence of glycerin and  $[(\text{Me}_2\text{N})_3\text{P}:\text{N}]_4\text{P}^+$  (Gly<sup>-</sup>) [(Gly<sup>-</sup>) = monovalent anion of glycerin] at 100° and 3.0 kg/cm<sup>2</sup> for 6 h to give viscous polyoxypropylene triol.

10632396

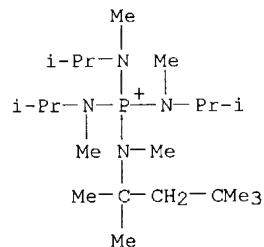
IT 289681-39-6P, preparation 300352-19-6P, preparation  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PRP (Properties);  
PREP (Preparation); USES (Uses)  
(manufacture of poly(alkylene oxides) using metal-free odorless  
phosphazenum salts as initiators)

RN 289681-39-6 CAPLUS

CN Phosphorus(1+), tris(N-methyl-2-propanaminato)(N,2,4,4-tetramethyl-2-pentanaminato)-, (T-4)-, salt with 1,2,3-propanetriol (1:1) (9CI) (CA INDEX NAME)

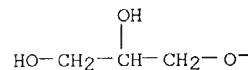
CM 1

CRN 161118-42-9  
CMF C21 H50 N4 P



CM 2

CRN 130543-62-3  
CMF C3 H7 O3

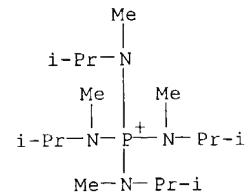


RN 300352-19-6 CAPLUS

CN Phosphorus(1+), tetrakis(N-methyl-2-propanaminato)-, (T-4)-, salt with 1,2,3-propanetriol (1:1) (9CI) (CA INDEX NAME)

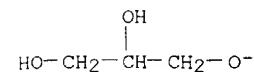
CM 1

CRN 300352-18-5  
CMF C16 H40 N4 P



CM 2

CRN 130543-62-3  
CMF C3 H7 O3

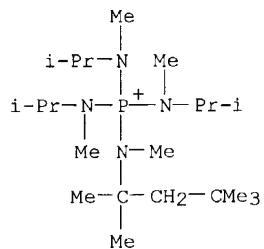


IT 289681-38-5 300352-17-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of phosphazenum salt initiators for manufacture of poly(alkylene oxides))

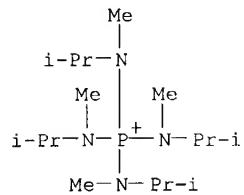
RN 289681-38-5 CAPLUS

CN Phosphorus(1+), tris(N-methyl-2-propanaminato)(N,2,4,4-tetramethyl-2-pentanaminato)-, hydroxide, (T-4)- (9CI) (CA INDEX NAME)

● OH<sup>-</sup>

RN 300352-17-4 CAPLUS

CN Phosphorus(1+), tetrakis(N-methyl-2-propanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)

● Cl<sup>-</sup>L7 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2000:616698 CAPLUS

DN 133:193628

TI Manufacture of poly(alkylene oxides) with reduced odor

IN Hen, Paraa; Inoue, Kaoru; Kakigano, Takeaki

PA Mitsui Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000239374	A2	20000905	JP 1999-44510	19990223

PRAJ JP 1999-44510 19990223

OS MARPAT 133:193628

AB The poly(alkylene oxides) are manufactured by addition polymerization of alkylene oxides in the presence of [R<sub>1</sub>R<sub>2</sub>R<sub>3</sub>R<sub>4</sub>A<sup>+</sup>]nBn<sup>-</sup> [R<sub>1</sub>-4 = aliphatic hydrocarbyl, (aliphatic hydrocarbyl- or hetero atom-containing) aromatic hydrocarbyl; A = N, P; Bn<sup>-</sup> = anion derived from active H compound; n = integer], where R<sub>1</sub>R<sub>2</sub>R<sub>3</sub>R<sub>4</sub>A<sup>+</sup> show maximum electrostatic potential ≤300 kJ/mol as ion pairs with OH<sup>-</sup>. Thus, propylene oxide was polymerized in the presence of glycerin mono[tert-butyl]phosphonium salt.

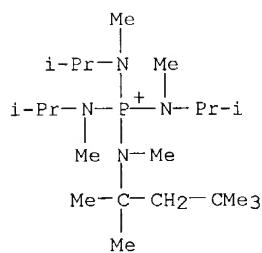
IT 289681-38-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(for catalyst preparation; manufacture of poly(alkylene oxides) by addition polymerization

10632396

in presence of quaternary phosphonium or ammonium salts)  
RN 289681-38-5 CAPLUS  
CN Phosphorus(1+), tris(N-methyl-2-propanaminato)(N,2,4,4-tetramethyl-2-pentanaminato)-, hydroxide, (T-4)- (9CI) (CA INDEX NAME)

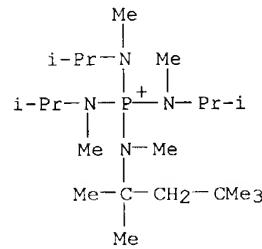


● OH<sup>-</sup>

IT 289681-39-6P, preparation  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)  
(manufacture of poly(alkylene oxides) by addition polymerization in presence of  
quaternary phosphonium or ammonium salts)  
RN 289681-39-6 CAPLUS  
CN Phosphorus(1+), tris(N-methyl-2-propanaminato)(N,2,4,4-tetramethyl-2-pentanaminato)-, (T-4)-, salt with 1,2,3-propanetriol (1:1) (9CI) (CA INDEX NAME)

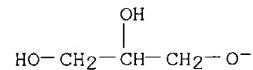
CM 1

CRN 161118-42-9  
CMF C21 H50 N4 P



CM 2

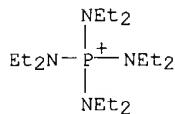
CRN 130543-62-3  
CMF C3 H7 O3



L7 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:511122 CAPLUS  
DN 131:131517  
TI Extractive recovery of aminophosphonium compound halogen-exchange  
catalysts from halogen-exchange reactions  
IN Cheng, Chi Hung; Balhoff, John F.; Lin, Ronny W.  
PA Albemarle Corporation, USA  
SO PCT Int. Appl., 38 pp.

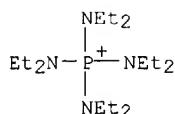
CODEN: PIXXD2  
 DT **Patent**  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9940052	A1	19990812	WO 1998-US26537	19981211
	W: CA, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6215032	B1	20010410	US 1998-21690	19980210
	CA 2320283	AA	19990812	CA 1998-2320283	19981211
	EP 1054853	A1	20001129	EP 1998-963163	19981211
	EP 1054853	B1	20030319		
	R: BE, DE, ES, FR, GB, IT, NL				
	JP 2002502690	T2	20020129	JP 2000-530484	19981211
	ES 2195434	T3	20031201	ES 1998-963163	19981211
PRAI	US 1998-21690	A	19980210		
	WO 1998-US26537	W	19981211		
OS	MARPAT 131:131517				
AB	<p>Aminophosphonium halogen-exchange catalysts are separated from mixts. composed predominately of aminophosphonium catalyst residue(s) [e.g., tetra(diethylamino)phosphonium bromide] and heavy ends from a halogen-exchange reaction (e.g., the reaction of hexachlorobenzene with KF) conducted in an aprotic solvent/diluent (e.g., PhCN) by extracting such mixts. with a neutral or acidic aqueous extraction solvent (e.g., aqueous hydrochloric acid). Halogen-exchange processes in which the catalytically active aminophosphonium catalysts are separated for reuse are also described. Given the expense of the aminophosphonium catalyst compds., this method presents an effective way of recovering such catalysts, in active form, enabling their reuse.</p>				
IT	<p><b>81175-49-7P</b>, Tetrakis(diethylamino)phosphonium bromide  <b>208509-87-9P</b>, Tetrakis(diethylamino)phosphonium chloride    RL: CAT (Catalyst use); PUR (Purification or recovery); PREP (Preparation); USES (Uses)    (extractive recovery of aminophosphonium compound halogen-exchange catalysts from halogen-exchange reactions)</p>				
RN	81175-49-7 CAPLUS				
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)				



● Br<sup>-</sup>

RN 208509-87-9 CAPLUS  
 CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, chloride, (T-4)- (9CI)  
 (CA INDEX NAME)



● Cl<sup>-</sup>

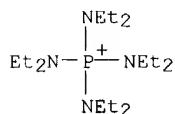
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:355777 CAPLUS

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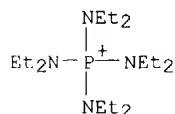
DN 131:18826  
TI Improved catalysis in halogen exchange reactions  
IN Berris, Bruce C.; Cheng, Chi-Hung  
PA Albemarle Corporation, USA  
SO PCT Int. Appl., 28 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9926950	A1	19990603	WO 1998-US22710	19981022	
	W: CA, JP					
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
	US 5965781	A	19991012	US 1997-975924	19971121	
	CA 2311134	AA	19990603	CA 1998-2311134	19981022	
	EP 1032577	A1	20000906	EP 1998-953999	19981022	
	R: BE, DE, ES, FR, GB, IT, NL					
	JP 2001524482	T2	20011204	JP 2000-522107	19981022	
	US 6046358	A	20000404	US 1999-351888	19990713	
PRAI	US 1997-975924	A	19971121			
	WO 1998-US22710	W	19981022			
AB	Impure tetra(dihydrocarbyl amino)phosphonium halide is contacted with a liquid cyclic ether to dissolve the phosphonium halide and leave at least a portion of the impurities comprising at least quaternary ammonium halide or an amidophosphoxide remaining in the solid state. The solids and the liquid phase are separated from each other, an anhydrous non-solvent for the tetra(dihydrocarbyl amino)phosphonium halide is mixed with the separated liquid phase to precipitate the tetra(dihydrocarbyl amino)phosphonium halide, which is then separated from the liquid phase. The so-treated tetra(dihydrocarbyl amino)phosphonium halide is more efficient as a catalyst for halogen exchange reactions than the original untreated tetra(dihydrocarbyl amino)phosphonium halide. E.g., purified tetrakis(diethylamino)phosphonium bromide catalyzed the halogen exchange of C6C16 with KF to give 2.5% hexafluorobenzene, 58.6% chloropentafluorobenzene, 23.8% dichlorotetrafluorobenzene, and 7.5% trichlorotrifluorobenzene.					
IT	81175-49-7, Tetrakis(diethylamino)phosphonium bromide					
	208509-87-9, Tetrakis(diethylamino)phosphonium chloride					
	RL: CAT (Catalyst use); USES (Uses)					
	(halogen exchange reactions catalyzed by tetra(dihydrocarbyl amino)phosphonium halides)					
RN	81175-49-7 CAPLUS					
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)					



● Br<sup>-</sup>

RN 208509-87-9 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)

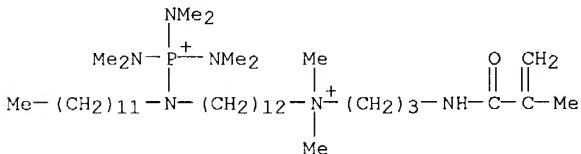


● Cl<sup>-</sup>

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:317643 CAPLUS  
DN 130:338859  
TI Crosslinking agents containing aminophosphonium groups  
IN Linkies, Adolf Heinz; Pasenok, Sergej  
PA Hoechst A.-G., Germany  
SO Ger. Offen., 12 pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	DE 19748651	A1	19990506	DE 1997-19748651	19971104	
	WO 9923125	A1	19990514	WO 1998-EP6818	19981028	
	W: AU, BR, CA, CN, CZ, HU, JP, KR, MX, PL, RU, SK, TR, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
	AU 9911561	A1	19990524	AU 1999-11561	19981028	
	ZA 9810034	A	19990504	ZA 1998-10034	19981103	
PRAI	DE 1997-19748651	A	19971104			
	WO 1998-EP6818	W	19981028			
AB	Crosslinking agents giving crosslinked polymers with better properties have the structure (R1R2N)(R3R4N)(R5R6N)PZX <sub>2</sub> C(R7):CH <sub>2</sub> B- [R1-6 = H, hydrocarbyl (optionally containing N or O); X, Y, Z = linking groups; R7 = H, alkyl; B = anion]. Stirring 6.6 g (Et <sub>2</sub> N)3P:NET and 32.8 g Br(CH <sub>2</sub> ) <sub>12</sub> Br in MeCN at 50-60° for 6 h and 80° for 9 h and stirring the hexane-insol. product with 6.8 g N-[3-(dimethylamino)propyl]methacrylamide in DMF at 60-70° for 12 h gave 6 g [(Et <sub>2</sub> N)3PN(Et)(CH <sub>2</sub> ) <sub>12</sub> N(Me) <sub>2</sub> (CH <sub>2</sub> ) <sub>3</sub> NHCOCH <sub>2</sub> ] <sub>2</sub> Br <sup>-</sup> . Stirring this product (6 g) with 1.5 g 1,12-dodecanediylbis(dimethyl(3-methacrylamidopropyl)ammonium) dibromide and 200 mg azo compound initiator at 50-60° for 3 h gave 5.1 g crosslinking agent.					
IT	<b>223682-61-9P 224305-70-8P 224305-72-0P</b> RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (crosslinking agents containing aminophosphonium groups)					
RN	223682-61-9 CAPLUS					
CN	Phosphorus(2+), [12-(dodecylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-methylmethanaminato)-, dibromide (9CI) (CA INDEX NAME)					



●2 Br<sup>-</sup>

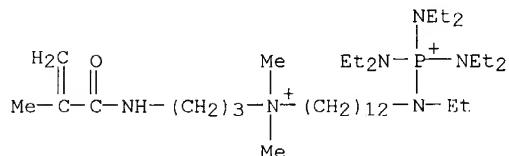
RN 224305-70-8 CAPLUS  
CN 1,12-Dodecanediaminium, N,N,N',N'-tetramethyl-N,N'-bis[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-, dibromide, polymer with (T-4)-[12-(ethylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-ethylethanaminato)phosphorus(1+) dibromide (9CI) (CA INDEX NAME)

CM 1

CRN 223682-52-8

CMF C35 H77 N6 O P . 2 Br

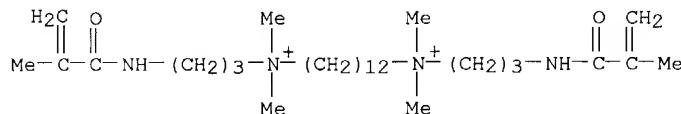
1.0632396



● 2 Br<sup>-</sup>

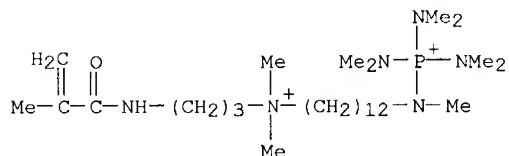
CM 2

CRN 212011-65-9  
CMF C30 H60 N4 O2 . 2 Br



● 2 Br<sup>-</sup>

RN 224305-72-0 CAPLUS  
CN Phosphorus(2+), [N,N-dimethyl-12-(methylamino- $\kappa$ N)-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminumato]tris(N-methylmethanaminato)-, dibromide, (T-4)- (9CI) (CA INDEX NAME)



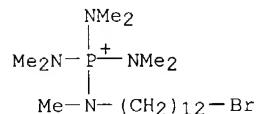
● 2 Br<sup>-</sup>

IT 223682-55-1P 223682-60-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction with [(dimethylamino)propyl]methacrylamide)

RN 223682-55-1 CAPLUS

CN Phosphorus(1+), (12-bromo-N-methyl-1-dodecanaminato-κN)tris(N-methylmethanaminato)-, bromide (9CI) (CA INDEX NAME)

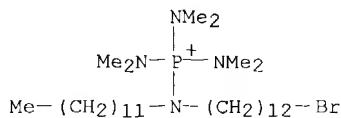


● Br<sup>-</sup>

RN 223682-60-8 CAPLUS

CN Phosphorus(1+), (12-bromo-N-dodecyl-1-dodecanaminato- $\kappa$ N)tris(N-

methylmethanaminato)-, bromide (9CI) (CA INDEX NAME)

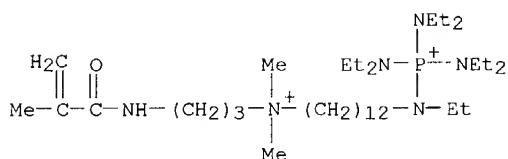
● Br<sup>-</sup>

IT 223682-52-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction with dodecanediylbis[dimethyl(3-methacrylamidopropyl)ammonium] dibromide)

RN 223682-52-8 CAPLUS

CN Phosphorus(2+), [12-(ethylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-ethylethanaminato)-, dibromide (9CI) (CA INDEX NAME)

●2 Br<sup>-</sup>

L7 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:311416 CAPLUS  
DN 130:338539

TI Polymers containing aminophosphonium groups, their preparation and use

IN Linkies, Adolf Heinz; Pasenok, Sergej

PA Hoechst A.-G., Germany

SO Ger. Offen., 16 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

PI DE 19748712	A1	19990506	DE 1997-19748712	19971104
WO 9923123	A1	19990514	WO 1998-EP6819	19981028
W: AU, BR, CA, CN, CZ, HU, JP, KR, MX, PL, RU, SK, TR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9915578	A1	19990524	AU 1999-15578	19981028
ZA 9809983	A	19990504	ZA 1998-9983	19981102

PRAI DE 1997-19748712 A 19971104  
WO 1998-EP6819 W 19981028

AB The polymers contain side chains with substituents XZP+(NR1R2)3 A- [A- = anion; each R1, R2 = H, C1-13 hydrocarbyl, or NR1R2 = heterocyclyl; X = (un)substituted C1-20 alkylene; Z = NR, CHR (R = H, C1-20 alkyl)] and are useful as catalysts and as pharmaceuticals, especially for treating hypercholesterolemia. Thus, (chloromethyl)styrene reacted with (Et<sub>2</sub>N)3P:NEt to give a monomer CH<sub>2</sub>:CHC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NEtP+(NEt<sub>2</sub>)<sub>3</sub>Cl- (mixture of m- and p-isomers), which was homopolymerd. using an azo initiator. The resulting polymer catalyzed halogen exchange of 4-ClC<sub>6</sub>H<sub>4</sub>CHO with KF to give 4-FC<sub>6</sub>H<sub>4</sub>CHO in 65% yield (85% selectivity), compared with 48% (55%) in the absence of catalyst.

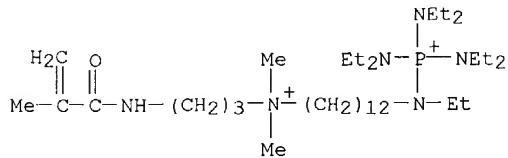
IT 223682-52-8P 223682-61-9P 224305-72-0P

224306-63-2P 224312-27-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

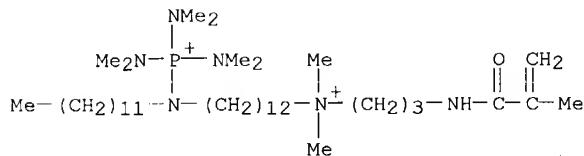
10632396

(Reactant or reagent)  
(monomer; preparation of polymers containing aminophosphonium groups)  
RN 223682-52-8 CAPLUS  
CN Phosphorus(2+), [12-(ethylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-ethylethanaminato)-, dibromide (9CI) (CA INDEX NAME)



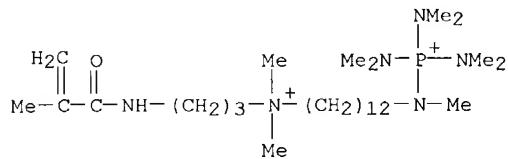
●2 Br<sup>-</sup>

RN 223682-61-9 CAPLUS  
CN Phosphorus(2+), [12-(dodecylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-methylmethanaminato)-, dibromide (9CI) (CA INDEX NAME)



●2 Br<sup>-</sup>

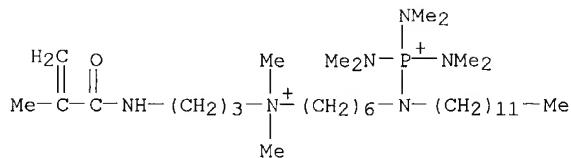
RN 224305-72-0 CAPLUS  
CN Phosphorus(2+), [N,N-dimethyl-12-(methylamino- $\kappa$ N)-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-methylmethanaminato)-, dibromide, (T-4)- (9CI) (CA INDEX NAME)



●2 Br<sup>-</sup>

RN 224306-63-2 CAPLUS  
CN Phosphorus(2+), [6-(dodecylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-hexanaminiumato]tris(N-methylmethanaminato)-, dibromide, (T-4)- (9CI) (CA INDEX NAME)

10632396

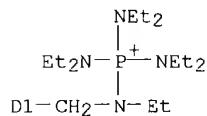


● 2 Br<sup>-</sup>

RN 224312-27-0 CAPLUS  
CN Phosphorus(1+), (ar-ethenyl-N-ethylbenzenemethanaminato)tris(N-ethylethanaminato)-, chloride (9CI) (CA INDEX NAME)



D1-CH=CH<sub>2</sub>



● Cl<sup>-</sup>

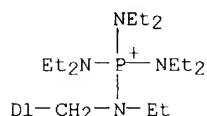
IT 224312-31-6P  
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
USES (Uses)  
(preparation of polymers containing aminophosphonium groups)  
RN 224312-31-6 CAPLUS  
CN Phosphorus(1+), [N-[(ethenylphenyl)methyl]ethanaminato]tris(N-ethylethanaminato)-, chloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 224312-27-0  
CMF C23 H44 N4 P . Cl  
CCI IDS



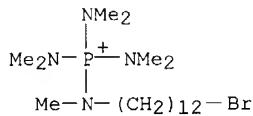
D1-CH=CH<sub>2</sub>



● Cl<sup>-</sup>

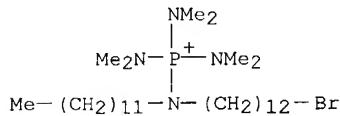
10632396

IT 223682-55-1P 223682-60-8P 224306-58-5P  
224306-62-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation of polymers containing aminophosphonium groups)  
RN 223682-55-1 CAPLUS  
CN Phosphorus(1+), (12-bromo-N-methyl-1-dodecanaminato- $\kappa$ N)tris(N-methylmethanaminato)-, bromide (9CI) (CA INDEX NAME)



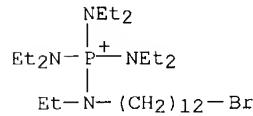
● Br<sup>-</sup>

RN 223682-60-8 CAPLUS  
CN Phosphorus(1+), (12-bromo-N-dodecyl-1-dodecanaminato- $\kappa$ N)tris(N-methylmethanaminato)-, bromide (9CI) (CA INDEX NAME)



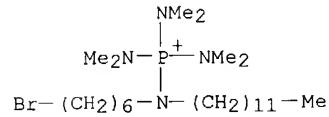
● Br<sup>-</sup>

RN 224306-58-5 CAPLUS  
CN Phosphorus(1+), (12-bromo-N-ethyl-1-dodecanaminato- $\kappa$ N)tris(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

RN 224306-62-1 CAPLUS  
CN Phosphorus(1+), [N-(6-bromohexyl)-1-dodecanaminato- $\kappa$ N]tris(N-methylmethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

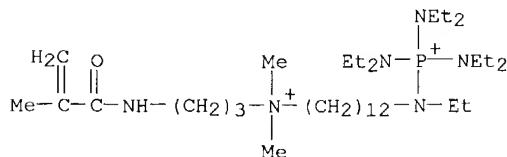
IT 224306-59-6P 224306-60-9P 224306-61-0P  
224306-64-3P

10632396

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of polymers containing aminophosphonium groups)  
RN 224306-59-6 CAPLUS  
CN Phosphorus(1+), [12-(ethylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-ethylethanaminato)-, dibromide, (T-4)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 223682-52-8  
CMF C35 H77 N6 O P . 2 Br

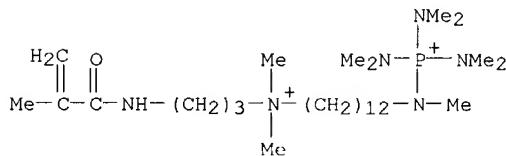


●2 Br<sup>-</sup>

RN 224306-60-9 CAPLUS  
CN Phosphorus(1+), [N,N-dimethyl-12-(methylamino- $\kappa$ N)-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-methylmethanaminato)-, dibromide, (T-4)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 224305-72-0  
CMF C28 H63 N6 O P . 2 Br

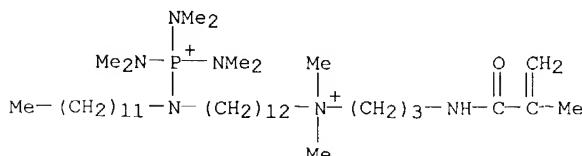


●2 Br<sup>-</sup>

RN 224306-61-0 CAPLUS  
CN Phosphorus(1+), [12-(dodecylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-methylmethanaminato)-, dibromide, (T-4)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 223682-61-9  
CMF C39 H85 N6 O P . 2 Br



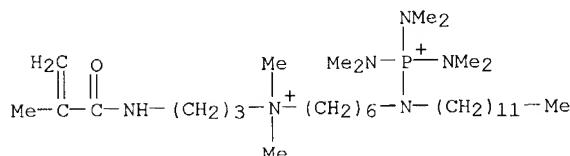
●2 Br<sup>-</sup>

RN 224306-64-3 CAPLUS  
CN Phosphorus(1+), [12-(dodecylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[2-methyl-1-oxo-2-propenyl]amino]propyl]-1-hexanaminiumato]tris(N-methylmethanaminato)-, dibromide, (T-4)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 224306-63-2

CRN 224500 65 2  
CME C33 H73 N6 Q P . 2 Br

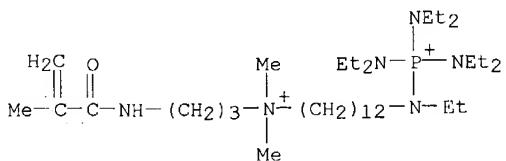


•2 Br<sup>-</sup>

L7 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:307412 CAPLUS  
 DN 130:306605  
 TI Aminophosphonium group-containing crosslinked copolymers for binding bile acids  
 IN Linkies, Adolf Heinz; Pasenok, Sergej  
 PA Hoechst A.-G., Germany  
 SO Ger. Offen., 16 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

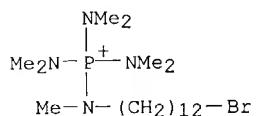
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19748659	A1	19990506	DE 1997-19748659	19971104
	WO 9922745	A1	19990514	WO 1998-EP6820	19981028
	W: AU, BR, CA, CN, CZ, HU, JP, KR, MX, PL, RU, SK, TR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9914866	A1	19990524	AU 1999-14866	19981028
	ZA 9810035	A	19990504	ZA 1998-10035	19981103
PRAI	DE 1997-19748659	A	19971104		
	WO 1998-EP6820	W	19981028		
AB	Aminophosphonium group-containing vinyl or acrylic copolymers which bind bile acids are prepared for removing bile acids from the enterohepatic circulation, decreasing bile acid and lipid resorption in the gastrointestinal tract, treating hypercholesterolemia, and preventing arteriosclerosis. Thus, tris(diethylamino)ethyliminophosphorane reacted successively with 1,12-dibromododecane, N-[3-(N,N-dimethylamino)propyl]methacrylamide, and 1,12-bis[N,N-dimethyl-N-(3-methacrylamidopropyl)]dodecane dibromide (in the presence of a radical initiator) to produce a crosslinked quaternary ammonium polymer which adsorbed Na glycocholate and Na taurocholate in in vitro tests.				
IT	223682-52-8P	223682-55-1P	223682-56-2P		
	223682-60-8P	223682-61-9P			
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)				
	(aminophosphonium group-containing crosslinked copolymers for binding bile acids)				
RN	223682-52-8	CAPLUS			
CN	Phosphorus(2+), [12-(ethylamino- $\kappa$ N)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-ethyllethanaminato)-, dibromide (9CI) (CA INDEX NAME)				

10632396



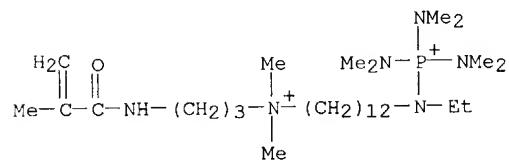
●2 Br<sup>-</sup>

RN 223682-55-1 CAPLUS  
CN Phosphorus(1+), (12-bromo-N-methyl-1-dodecanaminato-κN)tris(N-methylmethanaminato)-, bromide (9CI) (CA INDEX NAME)



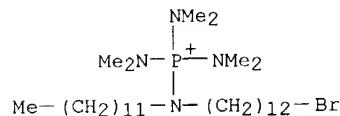
● Br<sup>-</sup>

RN 223682-56-2 CAPLUS  
CN Phosphorus(2+), [12-(ethylamino-κN)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-methylmethanaminato)-, dibromide (9CI) (CA INDEX NAME)



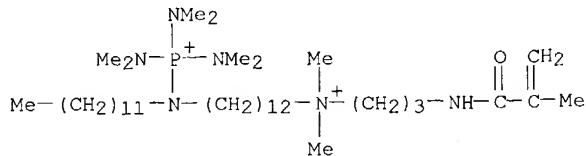
●2 Br<sup>-</sup>

RN 223682-60-8 CAPLUS  
CN Phosphorus(1+), (12-bromo-N-dodecyl-1-dodecanaminato-κN)tris(N-methylmethanaminato)-, bromide (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

RN 223682-61-9 CAPLUS  
CN Phosphorus(2+), [12-(dodecylamino-κN)-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminiumato]tris(N-methylmethanaminato)-, dibromide (9CI) (CA INDEX NAME)

●2 Br<sup>-</sup>

IT 223682-54-0P 223682-58-4P 223682-63-1P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (crosslinked; aminophosphonium group-containing crosslinked copolymers for binding bile acids)

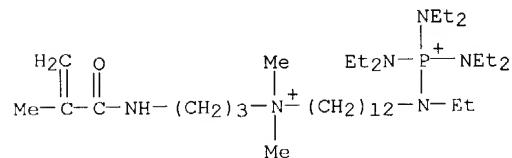
RN 223682-54-0 CAPLUS

CN 1,12-Dodecanediaminium, N,N,N',N'-tetramethyl-N,N'-bis[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-, dichloride, polymer with 12-[ethyl[tris(diethylamino)phosphonio]amino]-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminium dichloride (9CI) (CA INDEX NAME)

CM 1

CRN 223682-53-9

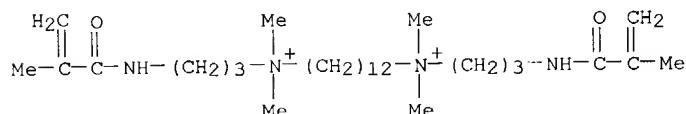
CMF C35 H77 N6 O P . 2 Cl

●2 Cl<sup>-</sup>

CM 2

CRN 212011-66-0

CMF C30 H60 N4 O2 . 2 Cl

●2 Cl<sup>-</sup>

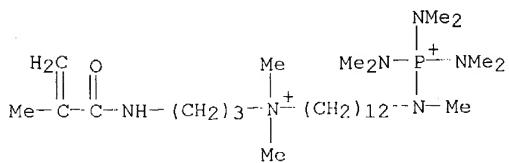
RN 223682-58-4 CAPLUS

CN 1,12-Dodecanediaminium, N,N,N',N'-tetramethyl-N,N'-bis[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-, dichloride, polymer with N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-12-[methyl[tris(dimethylamino)phosphonio]amino]-1-dodecanaminium dichloride (9CI) (CA INDEX NAME)

CM 1

CRN 223682-57-3

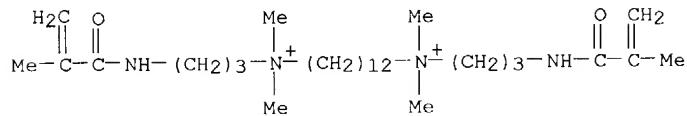
CMF C28 H63 N6 O P . 2 Cl



● 2 Cl<sup>-</sup>

CM 2

CRN 212011-66-0  
CMF C30 H60 N4 O2 . 2 Cl

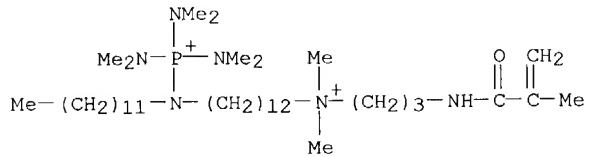


● 2 Cl<sup>-</sup>

RN 223682-63-1 CAPLUS  
CN 1,12-Dodecanediaminium, N,N,N',N'-tetramethyl-N,N'-bis[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-, dichloride, polymer with 12-[dodecyl[tris(dimethylamino)phosphonio]amino]-N,N-dimethyl-N-[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]-1-dodecanaminium dichloride (9CI) (CA INDEX NAME)

CM 1

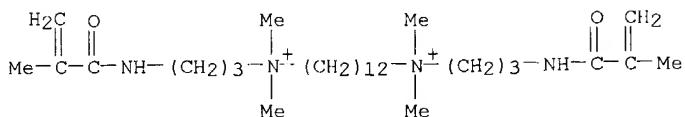
CRN 223682-62-0  
CMF C39 H85 N6 O P . 2 Cl



● 2 Cl<sup>-</sup>

CM 2

CRN 212011-66-0  
CMF C30 H60 N4 O2 . 2 Cl

●2 Cl<sup>-</sup>

L7 ANSWER 20 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:246868 CAPLUS

DN 130:298304

TI Preparation of fluorinated aromatic compounds

IN Schach, Thomas; Wessel, Thomas; Gutermuth, Maren

PA Clariant GmbH, Germany

SO Eur. Pat. Appl., 15 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 908443	A2	19990414	EP 1998-115767	19980821
	EP 908443	A3	20010404		
		R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO		
	DE 19745212	A1	19990415	DE 1997-19745212	19971013
	JP 11217347	A2	19990810	JP 1998-289803	19981012
	US 6114589	A	20000905	US 1998-170381	19981013
PRAI	DE 1997-19745212	A	19971013		

OS MARPAT 130:298304

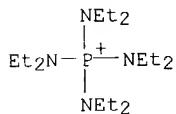
AB Fluoroarom. compds. of specified structure are prepared simply and in high space-time yields by the reaction of chloroarom. compds. with alkali metal fluorides in the presence of quaternary ammonium or phosphonium salts of specified structure. Drying a mixture of 8.0 mol 2,4-dichloro-5-fluororonitrobenzene, 0.3 mol [Me(OCH<sub>2</sub>CH<sub>2</sub>)<sub>4</sub>]<sub>3</sub>NMe<sub>2</sub> Cl<sup>-</sup>, and 9.6 mol KF azeotropically with xylene at 100° and heating at 128-130°/50 mbar for 11.5 h with distillation of volatiles gave 4.75 mol 2-chloro-4,5-difluororonitrobenzene (space-time yield 32.0 g/L-h).

IT 81175-49-7, Tetrakis(diethylamino)phosphonium bromide

RL: CAT (Catalyst use); USES (Uses)  
(catalysts for fluoride substitution of arm. chlorocompds.)

RN 81175-49-7 CAPLUS

CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)

● Br<sup>-</sup>

L7 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:162357 CAPLUS

DN 130:198136

TI Method for preparation of fluorinated aromatic compounds by halogen exchange

IN Appel, Wolfgang; Pasenok, Sergej; Wessel, Thomas

PA Hoechst A.-G., Germany

SO Ger. Offen., 18 pp.

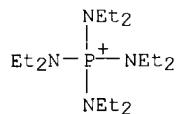
CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

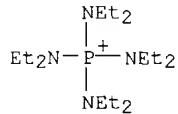
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19738196 CA 2302418 WO 9911588	A1 AA A1	19990304 19990311 19990311	DE 1997-19738196 CA 1998-2302418 WO 1998-EP5296	19970902 19980820 19980820
	W: CA, CN, IL, JP, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1015402 EP 1015402	A1 B1	20000705 20021204	EP 1998-947443	19980820
	R: BE, CH, FR, GB, LI, NL, IE				
	JP 2001514238 US 6166242	T2 A	20010911 20001226	JP 2000-508632 US 2000-486517	19980820 20000228
PRAI	DE 1997-19738196	A	19970902		
	WO 1998-EP5296	W	19980820		
OS	MARPAT 130:198136				
AB	Fluorinated aromatic compds. are prepared by treating haloarom. compds. with an alkali metal, alkaline earth metal or ammonium fluoride in presence of a quaternary phosphonium phase transfer catalyst and a nitro compound or sulfoxide. Thus, 4-ClC <sub>6</sub> H <sub>4</sub> CHO was treated with KF in presence of PhNO <sub>2</sub> and P+(NET <sub>2</sub> ) <sub>4</sub> Br <sup>-</sup> to give 77% 4-FC <sub>6</sub> H <sub>4</sub> CHO containing 0.01% PhCHO.				
IT	<b>81175-49-7</b> , Tetrakis(diethylamino)phosphonium bromide				
	RL: CAT (Catalyst use); USES (Uses)				
	(preparation of fluorinated aromatic compds. by halogen exchange under phase-transfer conditions)				
RN	81175-49-7 CAPLUS				
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)				

● Br<sup>-</sup>

L7	ANSWER 22 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN				
AN	1998:568834 CAPLUS				
DN	129:175793				
TI	Preparation of tetrakis(dihydrocarbylamino)phosphonium halide				
IN	Power, John M.; Berris, Bruce C.; Caillet, David A.				
PA	Albemarle Corporation, USA				
SO	PCT Int. Appl., 18 pp. CODEN: PIXXD2				
DT	<b>Patent</b>				
LA	English				
FAN.CNT	1				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9835971	A1	19980820	WO 1998-US2236	19980211
	W: CA, JP RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5883296	A	19990316	US 1997-801051	19970214
	EP 968217	A1	20000105	EP 1998-904952	19980211
	R: BE, DE, ES, FR, GB, IT, NL				
	JP 2002513401	T2	20020508	JP 1998-535819	19980211
PRAI	US 1997-801051	A	19970214		
	WO 1998-US2236	W	19980211		
OS	CASREACT 129:175793				
AB	A mixture prepared from (i) a tris(dihydrocarbylamino) phosphoroamidite and/or a hydrohalide thereof; (ii) a strong base (e.g., NaOH) in proportions of 2.0 to 4.0 mol of (ii) per mol. of (i); and (iii) at least one solvent for the base (e.g., H <sub>2</sub> O). To this mixture is added a hydrocarbyl monohalide (e.g., EtBr) in proportions of 1.0 to 3.0 mol per mol. of phosphoroamidite used in forming the initial mixture, and the resultant reaction produces tetrakis(dihydrocarbylamino)phosphonium halide. The process enables more efficient production of tetrakis(dihydrocarbylamino)phosphonium halides, and is capable of being effectively used in large scale(coating) production facilities while satisfying the economic constraints of com. operations.				

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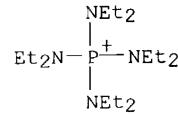
IT The title compds. are useful as catalysts in halogen exchange reactions.  
IT **81175-49-7P**, Tetrakis(diethylamino)phosphonium bromide  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA  
INDEX NAME)



● Br<sup>-</sup>

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1998:534933 CAPLUS  
DN 129:135971  
TI Preparation of perhalobenzenes containing at least two fluorine atoms.  
IN Balhoff, John F.; Lin, Ronny W.  
PA Albemarle Corporation, USA  
SO U.S., 6 pp.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 1  
PATENT NO. KIND DATE APPLICATION NO. DATE  
----- ----- ----- -----  
PI US 5789631 A 19980804 US 1996-756104 19961125  
PRAI US 1996-756104 19961125  
AB A process which comprises heating an anhydrous mixture containing a liquid phase and a solid phase formed from finely-divided NaF, hexabromobenzene, a phosphonium catalyst, and a liquid aprotic solvent/diluent at 170-240° and under pressure conditions which keep the solvent/diluent in the liquid state and for a time at which NaBr and ≥1 hexahalobenzene containing ≥2 F atoms are produced, is claimed.  
IT **81175-49-7**, Tetrakis(diethylamino)phosphonium bromide  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of perhalobenzenes containing ≥2 F atoms)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA  
INDEX NAME)



● Br<sup>-</sup>

RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1998:498275 CAPLUS  
DN 129:175438  
TI Catalysts for halogen-fluorine exchange reactions in aromatic compounds  
IN Pasenok, Sergej; Appel, Wolfgang; Pfirrmann, Ralf; Wessel, Thomas; Schach, Thomas; Schubert, Hans  
PA Hoechst A.-G., Germany

SO Ger. Offen., 16 pp.

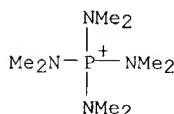
CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

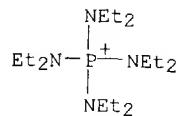
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19702282	A1	19980730	DE 1997-19702282	19970123
	DE 19702282	C2	19981119		
	WO 9832532	A1	19980730	WO 1998-EP332	19980122
	W: BY, CA, CN, JP, KR, RU, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	ZA 9800517	A	19990304	ZA 1998-517	19980122
	EP 958052	A1	19991124	EP 1998-903021	19980122
	EP 958052	B1	20021204		
	R: BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, IE, FI				
	JP 2001508359	T2	20010626	JP 1998-531579	19980122
RU 2198732	C2	20030220	RU 1999-118299	19980122	
ES 2189130	T3	20030701	ES 1998-903021	19980122	
US 6103659	A	20000815	US 1999-341986	19990721	
PRAI	DE 1997-19702282	A	19970123		
	WO 1990-EP332	W	19980122		
	WO 1998-EP332	W	19980122		
OS	MARPAT 129:175438				
AB	Catalysts for the title reaction contain (a) $\geq 1$ quaternary aminophosphonium salt optionally containing ring groups and $\geq 1$ of (b) quaternary ammonium compound, (c) other phosphonium salt, and (d) crown ether or $R(OCxH2x)rOR_1$ ( $R, R_1 = C1-16$ alkyl, $x = 2-6, r = 0-20$ ). Thus, reaction of 1 mol 4-nitrochlorobenzene 20 h at $180^\circ$ with 1.1 mol KF in the presence of $(EtN)_4PBr$ and polyethylene glycol di-Me ether gave 88% 4-nitrofluorobenzene.				
IT	<b>66647-63-0</b> , Tetrakis(dimethylamino)phosphonium chloride <b>81175-49-7</b> , Tetrakis(diethylamino)phosphonium bromide <b>83978-32-9</b> <b>83978-33-0</b> <b>83978-34-1</b> <b>83978-41-0</b> , Tetrakis(dipropylamino)phosphonium bromide <b>83978-46-5</b> <b>83978-47-6</b> <b>83986-51-0</b> <b>97040-81-8</b> , Tetrakis(dibutylamino)phosphonium bromide <b>208509-87-9</b> , Tetrakis(diethylamino)phosphonium chloride <b>211385-18-1</b> , Dimethylaminotris(diethylamino)phosphonium chloride <b>211385-21-6</b> , Dimethylaminotris(diethylamino)phosphonium bromide <b>211385-25-0</b> , Tetrakis(dibutylamino)phosphonium chloride <b>211385-26-1</b> <b>211385-29-4</b> <b>211385-30-7</b> <b>211385-31-8</b> <b>211385-34-1</b> <b>211385-35-2</b> <b>211385-36-3</b> <b>211385-37-4</b> <b>211385-38-5</b> <b>211385-39-6</b> <b>211385-40-9</b> <b>211385-41-0</b> <b>211385-42-1</b> <b>211385-43-2</b> <b>211385-44-3</b> <b>211385-45-4</b> <b>211385-48-7</b> <b>211385-49-8</b> <b>211385-50-1</b> <b>211385-51-2</b> <b>211385-52-3</b> <b>211385-58-9</b> , Tetrakis(dipropylamino)phosphonium chloride RL: CAT (Catalyst use); USES (Uses) (catalysts for halogen-fluorine exchange reactions in aromatic compds.) 				
RN	66647-63-0 CAPLUS				
CN	Phosphorus(1+), tetrakis(N-methylmethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)				

● Cl<sup>-</sup>

RN 81175-49-7 CAPLUS

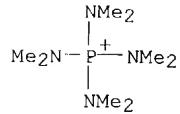
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)

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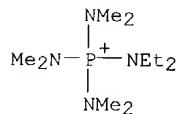
● Br<sup>-</sup>

RN 83978-32-9 CAPLUS  
CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, bromide, (T-4)- (9CI)  
(CA INDEX NAME)



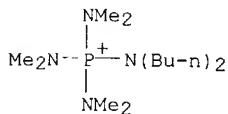
● Br<sup>-</sup>

RN 83978-33-0 CAPLUS  
CN Phosphorus(1+), (N-ethylethanaminato)tris(N-methylmethanaminato)-,  
bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

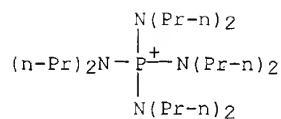
RN 83978-34-1 CAPLUS  
CN Phosphorus(1+), (N-butyl-1-butanaminato)tris(N-methylmethanaminato)-,  
bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

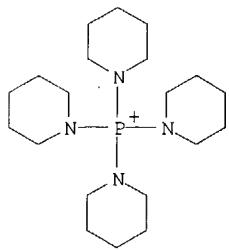
RN 83978-41-0 CAPLUS  
CN Phosphorus(1+), tetrakis(N-propyl-1-propanaminato)-, bromide, (T-4)- (9CI)  
(CA INDEX NAME)

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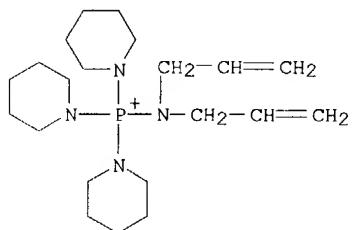
●  $\text{Br}^-$

RN 83978-46-5 CAPLUS  
CN Phosphorus(1+), tetra-1-piperidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)



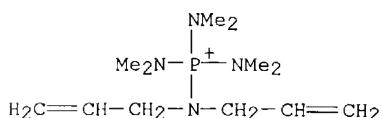
●  $\text{Br}^-$

RN 83978-47-6 CAPLUS  
CN Phosphorus(1+), tri-1-piperidinyl(N-2-propenyl-2-propen-1-aminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



●  $\text{Br}^-$

RN 83986-51-0 CAPLUS  
CN Phosphorus(1+), tris(N-methylmethanaminato)(N-2-propenyl-2-propen-1-aminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)

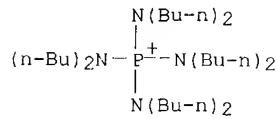


●  $\text{Br}^-$

RN 97040-81-8 CAPLUS

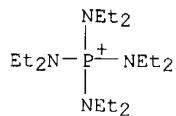
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CN Phosphorus(1+), tetrakis(N-butyl-1-butanaminato)-, bromide, (T-4)- (9CI)  
(CA INDEX NAME)



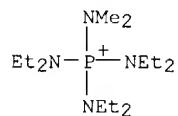
● Br<sup>-</sup>

RN 208509-87-9 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, chloride, (T-4)- (9CI)  
(CA INDEX NAME)



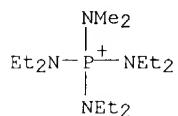
● Cl<sup>-</sup>

RN 211385-18-1 CAPLUS  
CN Phosphorus(1+), tris(N-ethylethanaminato)(N-methylmethanaminato)-,  
chloride, (T-4)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

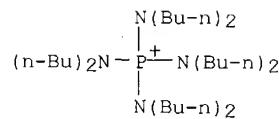
RN 211385-21-6 CAPLUS  
CN Phosphorus(1+), tris(N-ethylethanaminato)(N-methylmethanaminato)-,  
bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

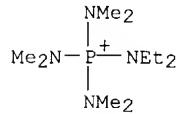
RN 211385-25-0 CAPLUS  
CN Phosphorus(1+), tetrakis(N-butyl-1-butanaminato)-, chloride, (T-4)- (9CI)  
(CA INDEX NAME)

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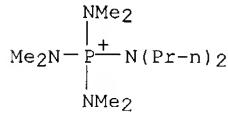
● Cl<sup>-</sup>

RN 211385-26-1 CAPLUS  
CN Phosphorus(1+), (N-ethylethanaminato)tris(N-methylmethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



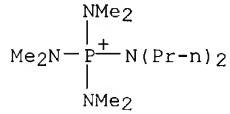
● Cl<sup>-</sup>

RN 211385-29-4 CAPLUS  
CN Phosphorus(1+), tris(N-methylmethanaminato)(N-propyl-1-propanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

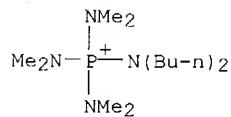
RN 211385-30-7 CAPLUS  
CN Phosphorus(1+), tris(N-methylmethanaminato)(N-propyl-1-propanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

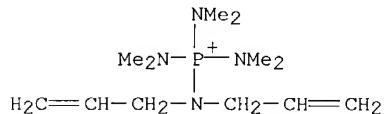
RN 211385-31-8 CAPLUS  
CN Phosphorus(1+), (N-butyl-1-butanaminato)tris(N-methylmethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)

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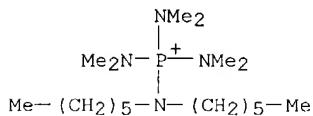
● Cl<sup>-</sup>

RN 211385-34-1 CAPLUS  
CN Phosphorus(1+), tris(N-methylmethanaminato)(N-2-propenyl-2-propen-1-aminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



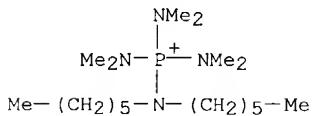
● Cl<sup>-</sup>

RN 211385-35-2 CAPLUS  
CN Phosphorus(1+), (N-hexyl-1-hexanaminato)tris(N-methylmethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

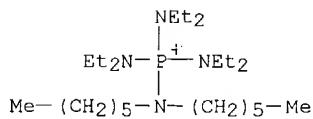
RN 211385-36-3 CAPLUS  
CN Phosphorus(1+), (N-hexyl-1-hexanaminato)tris(N-methylmethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

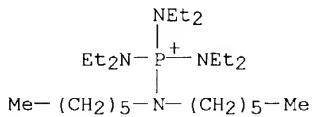
RN 211385-37-4 CAPLUS  
CN Phosphorus(1+), tris(N-ethylethanaminato)(N-hexyl-1-hexanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)

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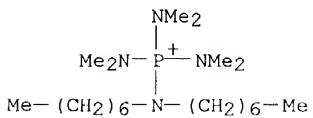
● Cl<sup>-</sup>

RN 211385-38-5 CAPLUS  
CN Phosphorus(1+), tris(N-ethylethanaminato)(N-hexyl-1-hexanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



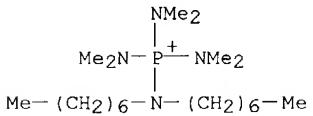
● Br<sup>-</sup>

RN 211385-39-6 CAPLUS  
CN Phosphorus(1+), (N-heptyl-1-heptanaminato)tris(N-methylmethanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

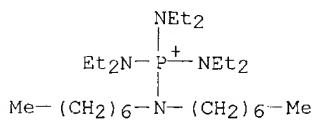
RN 211385-40-9 CAPLUS  
CN Phosphorus(1+), (N-heptyl-1-heptanaminato)tris(N-methylmethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

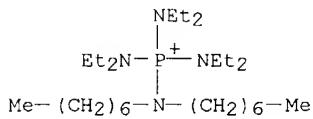
RN 211385-41-0 CAPLUS  
CN Phosphorus(1+), tris(N-ethylethanaminato)(N-heptyl-1-heptanaminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)

10632396



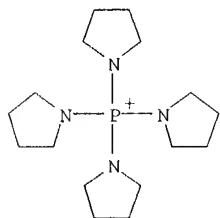
●  $\text{Cl}^-$

RN 211385-42-1 CAPLUS  
CN Phosphorus(1+), tris(N-ethylethanaminato)(N-heptyl-1-heptanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



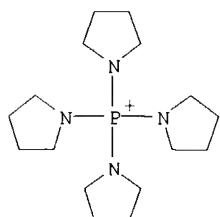
●  $\text{Br}^-$

RN 211385-43-2 CAPLUS  
CN Phosphorus(1+), tetra-1-pyrrolidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)



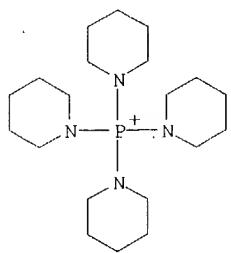
●  $\text{Cl}^-$

RN 211385-44-3 CAPLUS  
CN Phosphorus(1+), tetra-1-pyrrolidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)



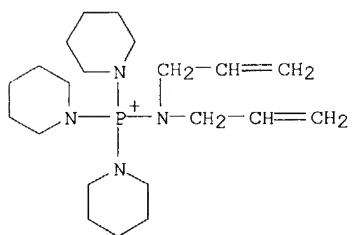
●  $\text{Br}^-$

RN 211385-45-4 CAPLUS  
CN Phosphorus(1+), tetra-1-piperidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)



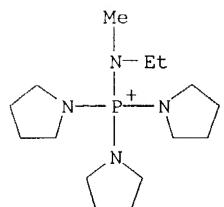
● Cl<sup>-</sup>

RN 211385-48-7 CAPLUS  
CN Phosphorus(1+), tri-1-piperidinyl(N-2-propenyl-2-propen-1-aminato)-, chloride, (T-4)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

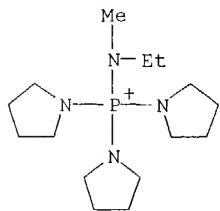
RN 211385-49-8 CAPLUS  
CN Phosphorus(1+), (N-methylethanaminato)tri-1-pyrrolidinyl-, chloride, (T-4)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

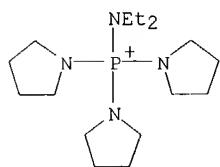
RN 211385-50-1 CAPLUS  
CN Phosphorus(1+), (N-methylethanaminato)tri-1-pyrrolidinyl-, bromide, (T-4)- (9CI) (CA INDEX NAME)

10632396



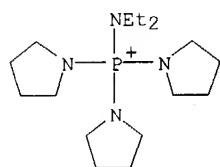
● Br<sup>-</sup>

RN 211385-51-2 CAPLUS  
CN Phosphorus(1+), (N-ethylethanaminato)tri-1-pyrrolidinyl-, chloride, (T-4)-  
(9CI) (CA INDEX NAME)



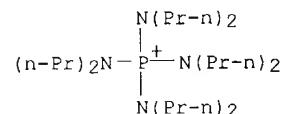
● Cl<sup>-</sup>

RN 211385-52-3 CAPLUS  
CN Phosphorus(1+), (N-ethylethanaminato)tri-1-pyrrolidinyl-, bromide, (T-4)-  
(9CI) (CA INDEX NAME)



● Br<sup>-</sup>

RN 211385-58-9 CAPLUS  
CN Phosphorus(1+), tetrakis(N-propyl-1-propanaminato)-, chloride, (T-4)-  
(9CI) (CA INDEX NAME)

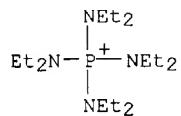


● Cl<sup>-</sup>

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

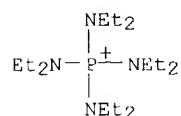
L7 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1998:352794 CAPLUS  
 DN 129:55711  
 TI Halogen exchange reactions and uses thereof for haloaromatic compounds  
 IN Bildinov, Igor; Podsevalov, Pavel; Nazarenko, Tatjana; Deev, Leonid;  
 Owens, David W.; Balhoff, John F.  
 PA Albemarle Corp., USA  
 SO PCT Int. Appl., 58 pp.  
 CODEN: PIXXD2  
 DT **Patent**  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9822413	A1	19980528	WO 1997-US21629	19971121
	W: CA, CN, JP, US, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5824827	A	19981020	US 1996-754338	19961122
	EP 944564	A1	19990929	EP 1997-948532	19971121
	EP 944564	B1	20020320		
	R: BE, DE, ES, FR, GB, IT, NL				
	CN 1238748	A	19991215	CN 1997-180006	19971121
	CN 1122004	B	20030924		
	JP 2001504495	T2	20010403	JP 1998-523980	19971121
	ES 2174308	T3	20021101	ES 1997-948532	19971121
	US 6241917	B1	20010605	US 1999-316170	19990521
	US 6455718	B1	20020924	US 2001-790263	20010221
PRAI	US 1996-754338	A2	19961122		
	US 1996-756105	A2	19961125		
	WO 1997-US21629	W	19971121		
	US 1999-316170	A3	19990521		
OS	MARPAT 129:55711				
AB	A mixture of (i) finely-divided alkali metal fluoride (e.g., KF), (ii) haloarom. compound having at least one halogen atom of atomic number greater than 9 on an aromatic ring (e.g., C6Cl6), and (iii) an aminophosphonium catalyst [e.g., (Et2N)4PBr], is heated at a temperature at which fluorine replaces one or more of the ring halogen atom of the haloarom. compound. Processes are described wherein fluorinated perhalobenzenes such as C6ClF5 and C6BrF5 formed in this manner are converted efficiently and at low cost to a variety of industrially important products.				
IT	<b>81175-49-7 208509-87-9</b> , Tetrakis(diethylamino)phosphonium chloride RL: CAT (Catalyst use); USES (Uses) (catalytic fluorine-exchange reaction of haloarom. compds.)				
RN	81175-49-7 CAPLUS				
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)				



● Br<sup>-</sup>

RN 208509-87-9 CAPLUS  
 CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, chloride, (T-4)- (9CI)  
 (CA INDEX NAME)

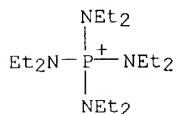


● Cl<sup>-</sup>

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

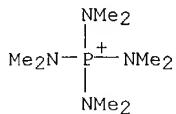
L7 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1998:112320 CAPLUS  
DN 128:180216  
TI Preparation of fluorine-containing compounds.  
IN Kolomeitsev, Alexander; Pasenok, Sergej  
PA Hoechst Research and Technology Deutschland GmbH and Co. KG, Germany;  
Kolomeitsev, Alexander; Pasenok, Sergej  
SO PCT Int. Appl., 35 pp.  
CODEN: PIXXD2  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9805610	A2	19980212	WO 1997-EP4284	19970806
	WO 9805610	A3	20010104		
	W: AU, BY, CA, CN, CZ, JP, KR, RU, UA, US RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE DE 19631854	C1	19980430	DE 1996-19631854	19960807
	AU 9740141	A1	19980225	AU 1997-40141	19970806
	AU 724747	B2	20000928		
	ZA 9706992	A	19980914	ZA 1997-6992	19970806
	EP 923508	A2	19990623	EP 1997-937556	19970806
	EP 923508	B1	20011114		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI AT 208753	E	20011115	AT 1997-937556	19970806
	RU 2175958	C2	20011120	RU 1999-104806	19970806
	ES 2164368	T3	20020216	ES 1997-937556	19970806
	PT 923508	T	20020429	PT 1997-937556	19970806
	JP 2002515876	T2	20020528	JP 1998-507627	19970806
	CN 1413177	A	20030423	CN 1997-197078	19970806
	KR 2000029815	A	20000525	KR 1999-700955	19990204
	US 6184425	B1	20010206	US 1999-230961	19990707
PRAI	DE 1996-19631854	A	19960807		
	WO 1997-EP4284	W	19970806		
OS	CASREACT 128:180216				
AB	Fluorine-containing compds. were prepared by reaction of compds. containing replaceable halogens with MF (M = alkali metal cation, alkaline earth metal cation, ammonium) in the presence of [A1A2N][A3A4N][A5A6N][A7A8N]P+B- [A1-A8 = alkyl, alkenyl, cycloalkyl, aryl, aralkyl; or A1A2, A3A4, A5A6, A7A8 are directly joined by O or N into a ring with 3 to 7 members; A9 = alkyl; B- = mono- or polyvalent acid radical] at 40-260°. Thus, 4-nitrochlorobenzene, tetrakis(dimethylamino)phosphonium bromide, Me <sub>2</sub> SO, and KF were heated at 180° for 5 h to give 86% 4-nitrofluorobenzene at 100% conversion.				
IT	81175-49-7 83978-32-9				
	RL: CAT (Catalyst use); USES (Uses) (preparation of fluorine-containing compds. using metal fluorides and tetraaminophosphonium salts)				
RN	81175-49-7 CAPLUS				
CN	Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)				



● Br<sup>-</sup>

RN 83978-32-9 CAPLUS  
CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, bromide, (T-4)- (9CI)  
(CA INDEX NAME)

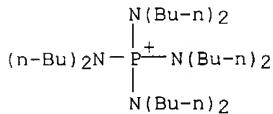
● Br<sup>-</sup>

L7 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1993:461966 CAPLUS  
 DN 119:61966  
 TI Chromatographic method for separation of transition metals  
 IN Aratskova, Aleksandra A.; Orlov, Vladimir I.; Semenij, Valerij Ya.  
 PA Dzerzhinskoe ok byuro avtomatiki, USSR; N-proizv ob "khimavtomatika"  
 SO U.S.S.R.  
 From: Izobreteniya 1992, (27), 169.  
 CODEN: URXXAF  
 DT Patent  
 LA Russian  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI SU 1749827	A1	19920723	SU 1990-4881847	19901111
PRAI SU 1990-4881847		19901111		

AB This method comprises passing their mixture with 4-(2-pyridylazo)-resorcinol through a water-repelling sorbent, eluting in an alkaline medium with an organic eluent containing an ion-pair reagent, and detecting the separated components. To increase the degree of separation, octabutyltetramidophosphonium bromide with a concentration of 0.001-0.003 M is used as the ion-pair reagent.

IT 97040-81-8  
 RL: ANST (Analytical study)  
 (in separation of transition metals by chromatog.)  
 RN 97040-81-8 CAPLUS  
 CN Phosphorus(1+), tetrakis(N-butyl-1-butanaminato)-, bromide, (T-4)- (9CI)  
 (CA INDEX NAME)

● Br<sup>-</sup>

L7 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1978:405919 CAPLUS  
 DN 89:5919  
 TI Phosphoric acid amides, -esteramides, and -esters and phosphonium compounds by direct synthesis from elementary phosphorus  
 IN Hoffmann, Klaus Dieter; Lehmann, Bodo; Lehmann, Hans Albert; Riesel, Lothar; Schumann, Kurt  
 PA Ger. Dem. Rep.  
 SO Ger. (East), 8 pp.  
 CODEN: GEXXA8  
 DT Patent  
 LA German  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DD 127187	Z	19770907	DD 1974-181729	19741016
PRAI DD 1974-181729		19741016		

AB (R<sub>1</sub>R<sub>2</sub>N)<sub>3-n</sub>P(O)(OR<sub>3</sub>)<sub>n</sub> (R<sub>1</sub>, R<sub>2</sub> = H, alkyl; R<sub>3</sub> = alkyl, H; n = 0-3) were prepared from P and R<sub>1</sub>R<sub>2</sub>NH in the presence of H<sub>2</sub>O-alkanol and [P(NR<sub>1</sub>R<sub>2</sub>)<sub>4</sub>]X (R<sub>1</sub>, R<sub>2</sub> as above, X = Cl, Br, I) from P and R<sub>1</sub>R<sub>2</sub>NH in the absence of H<sub>2</sub>O or alc. (7 compds. prepared). Thus, stirring 0.1 mol white P with 1 mol

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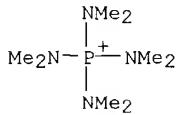
CCl<sub>4</sub>, 0.8 mol HN<sub>2</sub>, and 1.0 mol EtOH 8 h at 25° gave 50% (Et<sub>2</sub>N)<sub>2</sub>P(O)OEt, 17-20% (EtO)<sub>3</sub>PO, 15% (Et<sub>2</sub>N)<sub>3</sub>PO, and 12% Et<sub>2</sub>NP(O)(OEt)<sub>2</sub>. Passing a stream of HNMe<sub>2</sub> into a mixture of 0.1 mol white P in 1.5 mol CCl<sub>4</sub> 3 h at 75° gave 90% (Me<sub>2</sub>N)<sub>4</sub>P<sup>+</sup>Cl<sup>-</sup>.

IT 66647-63-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 66647-63-0 CAPLUS

CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, chloride, (T-4)- (9CI)  
(CA INDEX NAME)



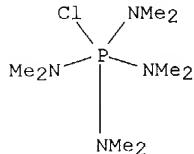
● Cl<sup>-</sup>

IT 66647-64-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from phosphorus and dimethylamine)

RN 66647-64-1 CAPLUS

CN Phosphoronetetramine, 1-chloro-N,N,N',N'',N'',N''',N''''-octamethyl-  
(9CI) (CA INDEX NAME)



=> d his

(FILE 'HOME' ENTERED AT 14:38:44 ON 04 JUN 2004)

FILE 'REGISTRY' ENTERED AT 14:38:59 ON 04 JUN 2004

L1 STRUCTURE UPLOADED

L2 34 S L1

L3 STRUCTURE UPLOADED

L4 3 S L3

L5 208 S L3 SSS FULL

FILE 'CAPLUS' ENTERED AT 14:45:05 ON 04 JUN 2004

L6 67 S L5

L7 28 S L6 AND PATENT/DT

=> s 16 not 17

L8 39 L6 NOT L7

=> s 18 and catalyst?

842182 CATALYST?

L9 9 L8 AND CATALYST?

=> d 1-9 bib abs hitstr

L9 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:668170 CAPLUS

DN 140:305723

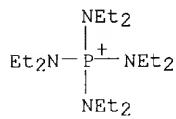
TI Synthesis of tetrakis(diethylamino)phosphonium bromide and its application  
as phase transfer **catalyst** in Halex reaction

AU Zhao, Wen-juan; Li, Ya-ming; Zhang, Hua; Wan, Xiang-jian; Na, Qiang

CS State Key Laboratory of Fine Chemicals, Dalian University of Technology,  
Dalian, Liaoning, 116012, Peop. Rep. China

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SO Jingxi Huagong (2003), 20(7), 407-408, 448  
CODEN: JIHUFJ; ISSN: 1003-5214  
PB Jingxi Huagong Bianjibu  
DT Journal  
LA Chinese  
AB Tetrakis(diethylamino)phosphonium bromide (TPB) was a novel phase transfer **catalyst** used to prepare fluorinated aromatic compds. TPB was synthesized from  $\text{PCl}_3$  through four-step reactions: quaternization, amination, neutralization and alkylation. The yield was up to 41%, w(TPB) = 90%. The structure of TPB was characterized by  $^{31}\text{PNMR}$ ,  $^1\text{HNMR}$  and MS. It was used in Halex reaction to prepare p-nitrofluorobenzene with 62% yield and its catalytic capability was studied.  
IT **81175-49-7P**, Tetrakis(diethylamino)phosphonium bromide  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)  
(synthesis of tetrakis(diethylamino)phosphonium bromide for phase transfer **catalyst** in Halex reaction)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



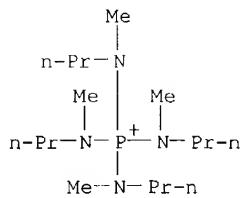
●  $\text{Br}^-$

L9 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:500214 CAPLUS  
DN 139:197878  
TI Anionic ring-opening polymerization of propylene oxide in the presence of phosphonium **catalysts** at various temperatures  
AU Rexin, Ornulf; Muelhaupt, Rolf  
CS Freiburg Materials Research Center and Institute for Macromolecular Chemistry, Albert-Ludwigs-University, Freiburg, D-79104, Germany  
SO Macromolecular Chemistry and Physics (2003), 204(8), 1102-1109  
CODEN: MCHPES; ISSN: 1022-1352  
PB Wiley-VCH Verlag GmbH & Co. KGaA  
DT Journal  
LA English  
AB Anionic ring-opening polymerization of propylene oxide in the presence of a potassium alkoxide initiator was accelerated by the addition of the bulky phosphonium salts tetrakis[cyclohexyl(methyl)amino]phosphonium-, tetrakis[propyl(methyl)amino]phosphonium-, and tetrakis{octyl(methyl)amino]phosphonium tetrafluoroborate. Dipropylene glycol (DPG) was partially deprotonated (5%) and used as initiator. The delocalization of the pos. charge over five atoms promoted the formation of a separated ion-pair, thus enhancing nucleophilicity and reactivity. The polymerization behavior of the counterions at varied temps. was studied. Characterization of poly(propylene oxide)s by means of  $^1\text{H}$  NMR spectroscopy, size exclusion chromatog. (SEC), and matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS) showed low polydispersities and the absence of byproducts and impurities. The d.p. (.hivin.DPn) for the polymers was in the range of 8-60 (.hivin.Mn = 630-3620  $\text{g}\cdot\text{mol}^{-1}$ ) and .hivin.Mw/.hivin.Mn obtained was 1.03-1.35 and 1.11-1.32 for MALDI-TOF MS and SEC, resp. Values calculated from the titration of hydroxyl groups (OHV) showed good agreement. Determination of the total degree of unsatn. in the range 13-60  $\text{mmol}\cdot\text{kg}^{-1}$  indicated larger amts. with decreasing polymerization rates and increasing polymerization temps.  
IT **582313-08-4P 582313-10-8P**  
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
USES (Uses)  
(anionic ring-opening polymerization of propylene oxide in presence of phosphonium **catalysts**)  
RN 582313-08-4 CAPLUS  
CN Phosphorus(1+), tetrakis(N-methyl-1-propanaminato)-, (T-4)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

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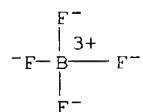
CM 1

CRN 582313-07-3  
CMF C16 H40 N4 P



CM 2

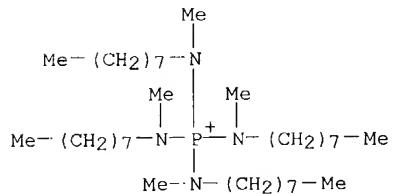
CRN 14874-70-5  
CMF B F4  
CCI CCS



RN 582313-10-8 CAPLUS  
CN Phosphorus(1+), tetrakis(N-methyl-1-octanaminato)-, (T-4)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

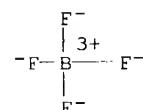
CM 1

CRN 582313-09-5  
CMF C36 H80 N4 P



CM 2

CRN 14874-70-5  
CMF B F4  
CCI CCS

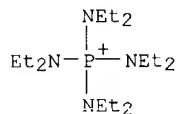


RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:306044 CAPLUS

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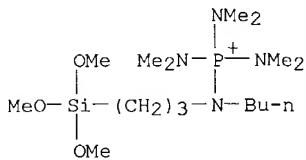
DN 139:230213  
TI Synergism in catalytic halogen-exchange fluorination of 4-chloronitro- and dichlorotetrafluorobenzenes  
AU Shipilov, A. I.; Bykova, A. B.; Elokhova, L. I.; Igumnov, S. M.  
CS Perm Branch of the Federal State Unitary Enterprise Russian Scientific Center "Applied Chemistry", Perm, 614034, Russia  
SO Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2003), 52(2), 487-491  
CODEN: RCBUEY; ISSN: 1066-5285  
PB Kluwer Academic/Consultants Bureau  
DT Journal  
LA English  
OS CASREACT 139:230213  
AB Synergism was studied in catalytic halogen-exchange fluorination of 4-chloronitro- and dichlorotetrafluorobenzenes. The synergistic effect in the fluorination of chloroarom. compds. with potassium fluoride was mainly attributed to separation of the activation functions of **catalysts** with respect to substrate mols.  
IT 81175-49-7, Tetrakis(diethylamino)phosphonium bromide  
RL: CAT (Catalyst use); USES (Uses)  
(synergism in catalytic halogen-exchange fluorination of 4-chloronitrobenzene and dichlorotetrafluorobenzenes)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

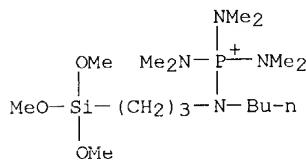
L9 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:57453 CAPLUS  
DN 139:68935  
TI Phosphazinium chloride **catalysts** immobilized on SBA-15 mesoporous material and silica gel: new exceptionally active **catalysts** for the chlorination of organic acids  
AU Kim, Keun-Sik; Kim, Jong-Ho; Seo, Gon  
CS Korea Fine Chemical Co. Ltd., Yeosu Chonnam, 555-290, S. Korea  
SO Chemical Communications (Cambridge, United Kingdom) (2003), (3), 372-373  
CODEN: CHCOFS; ISSN: 1359-7345  
PB Royal Society of Chemistry  
DT Journal  
LA English  
OS CASREACT 139:68935  
AB Novel reusable phosphazinium chloride **catalysts** immobilized on SBA-15 mesoporous material and silica gel show exceptional activities and selectivities even in the continuous chlorination reaction of organic acids with thionyl chloride or phosgene.  
IT 550372-47-9P 550372-49-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate, reaction with SBA-15 or silica gel; phosphazinium chloride **catalysts** immobilized on SBA-15 mesoporous material and silica gel for chlorination of organic acids)  
RN 550372-47-9 CAPLUS  
CN Phosphorus(1+), tris(N-methylmethanaminato)[N-[3-(trimethoxysilyl)propyl]-1-butanaminato- $\kappa$ N]-, chloride, (T-4)- (9CI) (CA INDEX NAME)

● Cl<sup>-</sup>

RN 550372-49-1 CAPLUS  
 CN Phosphorus(1+), tris(N-methylmethanaminato)[N-[3-(trimethoxysilyl)propyl]-1-butanaminato- $\kappa$ N]-, (T-4)-, (hydrogen dichloride) (9CI) (CA INDEX NAME)

CM 1

CRN 550372-48-0  
 CMF C16 H42 N4 O3 P Si

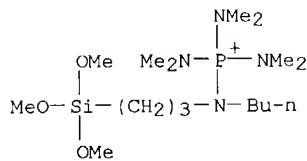


CM 2

CRN 23231-72-3  
 CMF C12 H

-Cl-H<sup>+</sup>-Cl-

IT 550372-47-9DP, silica-supported 550372-49-1DP,  
 silica-supported  
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
 USES (Uses)  
 (phosphazhenium chloride **catalysts** immobilized on SBA-15  
 mesoporous material and silica gel for chlorination of organic acids)  
 RN 550372-47-9 CAPLUS  
 CN Phosphorus(1+), tris(N-methylmethanaminato)[N-[3-(trimethoxysilyl)propyl]-1-butanaminato- $\kappa$ N]-, chloride, (T-4)- (9CI) (CA INDEX NAME)

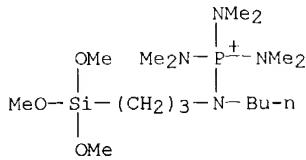
● Cl<sup>-</sup>

RN 550372-49-1 CAPLUS  
 CN Phosphorus(1+), tris(N-methylmethanaminato)[N-[3-(trimethoxysilyl)propyl]-1-butanaminato- $\kappa$ N]-, (T-4)-, (hydrogen dichloride) (9CI) (CA INDEX NAME)

10632396

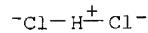
CM 1

CRN 550372-48-0  
CMF C16 H42 N4 O3 P Si



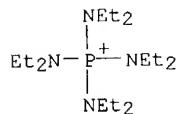
CM 2

CRN 23231-72-3  
CMF C12 H



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:603991 CAPLUS  
DN 137:369779  
TI Fluorination of chloroarenes in the presence of amidophosphonium salts  
AU Kolomeitsev, A. A.; Pazenok, S. V.; Marchenko, A. P.; Koidan, G. N.;  
Poludnenko, V. G.; Pinchuk, A. M.; Yagupol'skii, Yu. L.; Yagupol'skii, L.  
M.  
CS Inst. Org. Khim., NAN Ukrainskii, Kiev, Ukraine  
SO Ukrainskii Khimicheskii Zhurnal (Russian Edition) (2002), 68(5-6), 103-106  
CODEN: UKZHAU; ISSN: 0041-6045  
PB Institut Obshchei i Neorganicheskoi Khimii im. V. I. Vernadskogo NAN  
Ukrainy  
DT Journal  
LA Russian  
AB (Et<sub>2</sub>N)<sub>4</sub>P<sup>+</sup> Br<sup>-</sup> (I) was used as a **catalyst** in the fluorination of  
chlorobenzenes with KF. I assured a high degree of exchange and was more  
thermally stable in comparison with previously applied **catalysts**  
IT 81175-49-7, Tetrakis(diethylamino)phosphonium bromide  
RL: CAT (Catalyst use); USES (Uses)  
(fluorination of chlorobenzenes in presence of)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA  
INDEX NAME)

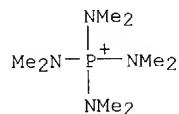


● Br<sup>-</sup>

L9 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:515328 CAPLUS  
DN 137:239573  
TI Interphase catalysis during photographic black-and-white development in  
the presence of hydrophobic DIR-compound

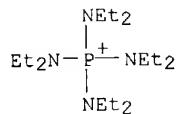
10632396

AU Blinova, T. D.; Kaplun, L. Ya.; Dan'shin, S. A.; Shapiro, B. I.  
CS NPO "FoMos", Moscow, Russia  
SO Zhurnal Nauchnoi i Prikladnoi Fotografii (2002), 47(3), 20-29  
CODEN: ZNPFEK; ISSN: 0869-6144  
PB Nauka  
DT Journal  
LA Russian  
AB Photog. effect of a development inhibitor-releasing (DIR) compound to large degree is determined by interphase catalysis related to transfer of OH- ions from aqueous phase into an organic phase. The concentration of DIR coupler necessary for DIR effect can be decreased by 4-5 times in presence of quaternary ammonium or phosphonium **catalysts** salts. Interphase **catalysts** added at non-optimal concentration ( $>3 \times 10^{-3}$  mol/mol Ag) neg. affect modulation transfer function.  
IT 66647-63-0, Tetrakis(dimethylamino)phosphonium chloride  
208509-87-9, Tetrakis(diethylamino)phosphonium chloride  
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)  
(interphase **catalyst**; interphase catalysis during photog.  
black-and-white development in presence of hydrophobic DIR coupler)  
RN 66647-63-0 CAPLUS  
CN Phosphorus(1+), tetrakis(N-methylmethanaminato)-, chloride, (T-4)- (9CI)  
(CA INDEX NAME)



● Cl<sup>-</sup>

RN 208509-87-9 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, chloride, (T-4)- (9CI)  
(CA INDEX NAME)

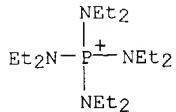


● Cl<sup>-</sup>

L9 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:506541 CAPLUS  
DN 137:352723  
TI Catalytic Fluorodechlorination of Polychlorofluorobenzenes with Potassium Fluoride  
AU Shipilov, A. I.; Karyukalova, N. N.; Igumnov, S. M.  
CS Perm Division of the Federal State Unitary Enterprise "Russian Scientific Center Applied Chemistry", Perm, 614034, Russia  
SO Russian Journal of Organic Chemistry (Translation of Zhurnal Organicheskoi Khimii) (2002), 38(2), 220-223  
CODEN: RJOCEQ; ISSN: 1070-4280  
PB MAIK Nauka/Interperiodica Publishing  
DT Journal  
LA English  
AB Fluorodechlorination of trichlorotrifluorobenzenes with potassium fluoride in the presence of phase-transfer **catalysts** was investigated. Onium **catalysts** [hexaethylguanidinium chloride, tetrakis(diethylamino)phosphonium bromide] take part in stabilization of the intermediate σ-complex. The catalytic role of polyethers (tetraglyme, 18-crown-6) in the fluorodechlorination process is limited to increasing the fluoride ion concentration

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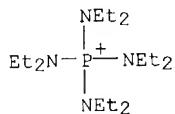
IT 81175-49-7, Tetrakis(diethylamino)phosphonium bromide  
RL: CAT (Catalyst use); USES (Uses)  
(phase-transfer catalytic fluorodechlorination of  
trichlorotrifluorobenzenes with potassium fluoride)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA  
INDEX NAME)



● Br<sup>-</sup>

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2000:252670 CAPLUS  
DN 133:19070  
TI Catalytic fluorination of hexachlorobenzene by supported potassium  
fluoride  
AU Shipilov, A. I.; Fedoseev, N. G.  
CS Permskii Filial, RNTs "Prikladnaya Khimiya", Perm, Russia  
SO Zhurnal Prikladnoi Khimii (Sankt-Peterburg) (2000), 73(3), 522-523  
CODEN: ZPKHAB; ISSN: 0044-4618  
PB Nauka  
DT Journal  
LA Russian  
AB Catalytic fluorination of hexachlorobenzene using CaF<sub>2</sub>- or BaF<sub>2</sub>-supported  
KF in the presence of quaternary phosphonium salt as phase transfer  
catalyst was studied. Synergistic effect was observed  
IT 81175-49-7, Tetrakis(diethylamino)phosphonium bromide  
RL: CAT (Catalyst use); USES (Uses)  
(catalytic fluorination of hexachlorobenzene by supported potassium  
fluoride)  
RN 81175-49-7 CAPLUS  
CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, bromide, (T-4)- (9CI) (CA  
INDEX NAME)



● Br<sup>-</sup>

L9 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1993:81490 CAPLUS  
DN 118:81490  
TI Kinetic studies of the reaction of tetrabromodiphenylolpropane with  
diphenylolpropane diglycidyl ether  
AU Aldoshina, I. V.; Shoshina, L. V.; Kovaleva, T. I.; Babenko, S. V.;  
Klebanov, M. S.  
CS USSR  
SO Epoksidnye, Allil'nye Akrilatnye Polim. (1990), 16-25. Editor(s):  
Klebanov, M. S. Publisher: NIITEKHM, Moscow, USSR.  
CODEN: 57CJAF  
DT Conference  
LA Russian  
AB Kinetics of the polymerization of tetrabromobisphenol A with diphenylolpropane  
diglycidyl ether were studied at 140°, in the presence of

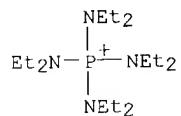
Ph<sub>3</sub>EtP+I-, PhCH<sub>2</sub>NMe<sub>2</sub>, 2-methylbenzimidazole, 1,2-dimethyl-3-cyanoethylbenzinidazolium iodide, (Et<sub>2</sub>N)<sub>4</sub>P+I-, and Zn(OAc)<sub>2</sub>·2H<sub>2</sub>O **catalysts**. Samples from the reaction mixts. were analyzed by titration, and dynamic viscosity was determined at 120°. The optimum **catalysts** for synthesis of brominated epoxy resins were the phosphonium compds.

IT 81175-48-6

RL: CAT (Catalyst use); USES (Uses)  
(**catalysts**, for polymerization of tetrabromobisphenol A with bisphenol A diglycidyl ether, kinetics in relation to)

RN 81175-48-6 CAPLUS

CN Phosphorus(1+), tetrakis(N-ethylethanaminato)-, iodide, (T-4)- (9CI) (CA INDEX NAME)

● I<sup>-</sup>